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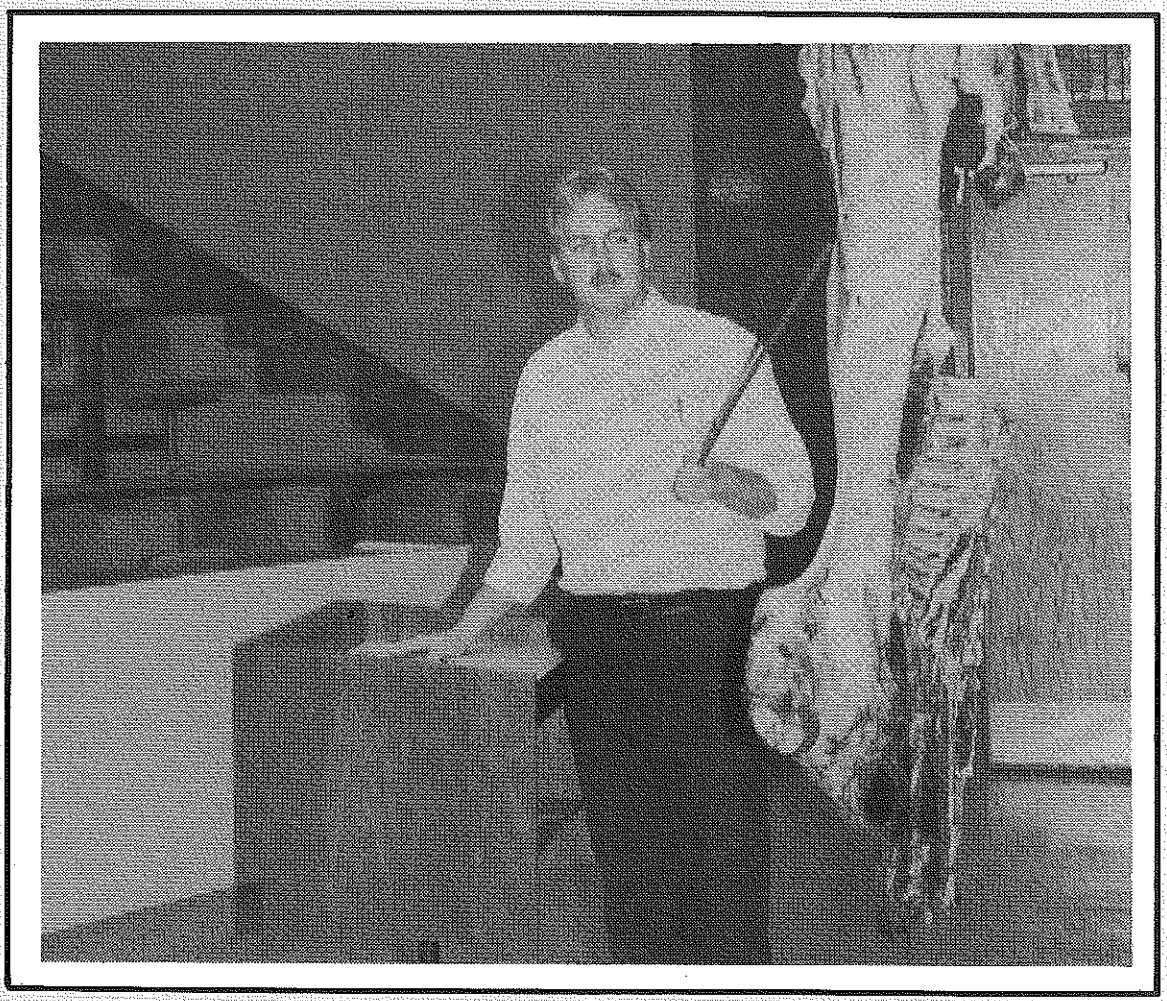

THEME: Articulating Instructional Programs

THE
AGRICULTURAL EDUCATION
MAGAZINE

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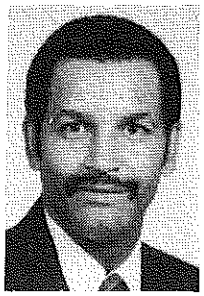
Duplication vs. Articulation of Instruction



By Blannie E. Bowen, Editor

(Dr. Bowen is Rumberger Professor of Agriculture in the Department of Agricultural and Extension Education at Pennsylvania State University, University Park, Pennsylvania 16802.)

Agricultural educators readily agree that carefully sequenced instruction is superior to haphazard, poorly organized instruction. From an organizational standpoint, this means Concept A should be linked to Concept B, Concept B to Concept C, etc. Further, teachers who maintain an appropriate pace between concepts consider timing a crucial component of the instructional process. Such teachers can somehow accurately judge when students have mastered a concept. After making this crucial judgment, excellent teachers can then clearly demonstrate how Concepts A and B are connected before they plunge into Concept B.

Educators love to discuss this aspect of instructional sequencing — as long as the discussion is confined to a single course. But, when the discussion turns to sequencing courses (1) within agriculture and (2) between agriculture and related areas, the discussion usually sours — and for good reason.

Our system of agricultural education says the Concepts A and B, as taught by agricultural educators, will also be taught in other courses. Secondary level biology, general science, mathematics, and industrial arts courses all have content that agricultural educators universally label as "agriculture." On the post-secondary level, students sometimes complain that courses in agriculture have excessive duplication. Undergradute agricultural education majors have historically bemoaned the overlap that has to result from three, four, or perhaps even five REQUIRED teaching methods courses. Graduate students also occasionally share their candid but polite views. One student humorously confessed - after graduating - that the professors for his graduate courses in agricultural education changed, but the content did not.

A Case for Articulation

The rejoinder agricultural educators usually provide for the above scenarios is predictable and disappointing - "I'm the teacher and you are the student. Who is in the best position to determine what needs to be taught?" Merely "putting students in their places" is an insufficient and unwise course of action. A bit of reality therapy would suggest that some of the criticisms are quite valid!

There are numerous solutions for the above scenarios, however, one must be viewed as most viable - **Articulate the Instruction.** Merely responding that repetition, overlap, and duplication are necessary ills that students must experience if they are to (1) perfect agricultural skills, (2) acquire the desired knowledge, and (3) develop appropriate behaviors is not wise. Serious articulation efforts are needed because viciously clinging to the status quo is dangerous and ill-advised. A laissez faire posture is especially precarious now that many idealistic and somewhat unrealistic plans that were fathered by the Educational Reform Movement are now being implemented.

Philosophy and Articulation

Efforts to articulate a curriculum frequently mean clashes with a discipline's philosophical foundation. Some scholars would even say that articulation and philosophy are at opposite ends of a continuum. Others interpret this real (or imagined) articulation-philosophy dichotomy to mean lost positions or RIF - Reduction in Force. The following questions illustrate the breadth and magnitude of the concerns to be addressed if the profession wishes to bring more articulation to agricultural education:

- Do undergraduates in agricultural education need separate teaching methods courses?
- How and who should provide instruction about agriculture for elementary grade students?
- Can advanced placement be used to more effectively articulate secondary and post-secondary instruction in agriculture?
- Can placement tests be better utilized in agricultural education at the university level?
- How can young and adult farmer education activities be better coordinated?
- How can vocational agriculture teachers and 4-H agents work more cooperatively to meet the needs of the school district?
- Is the knowledge base in agricultural education so shallow that graduate level courses tend to be clones?

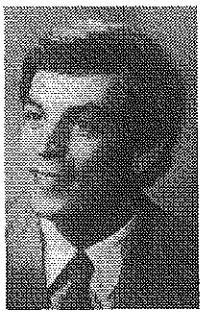
About This Issue

Thad Owens of Hinds Community College in Raymond, Mississippi, served as the theme editor for this issue that focuses on a topic that won't vanish. Questions will always be posed about why certain courses and curricula exist. One hopes that a solid knowledge base and societal need are the main reasons for instruction in agricultural education.

About the Cover

Instructional facilities of the future will allow agricultural educators to bring teaching aids directly to students for close observation. Such facilities will also enhance articulation efforts within agriculture and between agriculture and other subject matter areas. (Photo courtesy of Michael McMahon, Graduate Assistant, Department of Agricultural Education, Texas A&M University.)

Articulation of the Vocational Agriculture Program with Community and Junior Colleges



By R. Dean Hollenbeck

(Dr. Hollenbeck is the Vocational Student Organization Specialist for the Colorado Community College and Occupational Education System, 1391 N. Speer Blvd., Denver, Colorado 80204.)

Articulation is a relatively new concept in vocational agriculture. In a time of squeezing budgets and limited resources, articulation can be a partial answer to the problem of increased cost per student, what competencies need to be taught, and who should teach the competencies. Because of technological changes in many agricultural occupations, many students are finding that they need more training than the traditional vocational agriculture class may offer if they are to be successful on the job.

Vocational agriculture instructors must identify the occupational objectives of these students and then guide them to the successful completion of their chosen instructional program.

Cooperation and Articulation

As a result of cooperation between the local vocational agriculture instructor and the community or junior college agriculture instructor, a student may obtain the advanced skills needed, thereby, avoiding unnecessary repetition of instruction. The goal of articulation should be to work with unprepared students and to limit the amount of duplication of effort in educational programs.

Of course, all good vocational agriculture instructors know how to use their advisory committees, administration, etc., to determine what occupations are important to the local program. After these occupations have been identified, the instructor should help students determine what occupations they are interested in and then identify the students' occupational objectives.

Assessing Student Needs

One challenge vocational agriculture instructors will confront is the development of a training program for each student. This includes the student's classroom instruction, individualized instruction, and supervised occupational experience. Colorado has developed a computerized system that allows an instructor to develop a training plan for each student based on the student's occupational objective. A computerized list of jobs (remember, a job has one or more skills involved), is then obtained for the student and instructor's use. That list is then used to determine where a student is at any point of the individual training plan.

Another issue secondary and post-secondary agriculture instructors must address relates to a viable testing system. Such a system must determine what skills the student now possesses as well as the skills the student must acquire. Furthermore, a well-organized educational plan by instructors and administrators at both levels must be implemented regarding student achievement, curricula, and student services. Cooperation is a key at this point. It will take cooperation by all for these types of programs to be successful.

Conclusion

The benefits of a well-articulated program are many. First, the student is most important. By determining a training plan and being able to work with both the high school instructor and later with a community or junior college instructor, the student will be able to complete a training plan much sooner and with less repeated instruction. Both the high school and community or junior college will see more efficient use of their resources. The instructors will be able to determine what skills need to be taught and at what level.

Another very important benefit of articulation is that instructional programs can be a very effective recruitment tool for secondary programs and community or junior colleges. Articulation can and will be an important part of vocational agriculture in the future. Agriculture instructors must remember that they are producing a product that is a well-qualified person for the work force. The profession must implement measures to make sure that the product of vocational-technical education in agriculture is saleable.

Articulation and Program Diversity

By J. David McCracken

(Dr. McCracken is a Professor of Agricultural Education at The Ohio State University, Columbus, Ohio 43210).

Agricultural education in the public schools has been seeking how it might best adapt to a changing environment. National and state studies have been or are being conducted to re-examine objectives and seek ways to better serve the needs of a changing clientele. Changes in program focus bring changes in the curriculum and in the responsibilities of those who teach and manage the learning process. Teachers of vocational agriculture, while desiring to keep their programs up-to-date, also question whether they are able to accept broadened responsibilities and serve additional people.

What changes are being recommended? The mission for agricultural education is being redefined. Traditionally, programs have offered instruction in agriculture. This instruction was to serve students having an occupational objective relating to the broad field of agriculture. A major change in focus is proposed in that agricultural education is now to be offered about agriculture. This means that agriculture will be studied for non-vocational reasons. This change in mission will mean that more clients will be served, but for shorter periods of time. Some of the instruction may be integrated with other course work in the school.

Examples of some of the new ways agriculture may be offered in public school settings include: agricultural science, honors courses in agriculture which may carry university credit, avocational courses, courses for consumers of agricultural products, instruction about agriculture in an international market, orientation courses designed to provide practical experiences at the junior high level, and agricultural awareness information integrated into the elementary school curriculum.

If these offerings actually are put into effect, the problem of articulation will become more important and more difficult. Redundancy may become a problem, because of the same content being covered in many different ways. Also, some students may pick and choose the courses in which they enroll, and thus miss instruction most agricultural educators regard as critical.

Articulation and Tracking

Articulation among education levels is much easier to achieve in an educational system where students are tracked with little flexibility to move from one track to another. The author had the opportunity to observe the educational system in several other cultures during the year he served as a Fulbright Scholar in the country of Malaysia. The educational system in Malaysia is a one-track system through lower secondary school (Figure 1). At the completion of lower secondary education, students enter either an arts and science upper secondary school, a technical school, or a vocational school. The technical school is oriented towards preparation of students for university work in mathematics, engineering, and the physical sciences. The arts and science school is designed as college preparation for other areas of study. The vocational school is designed to prepare students for work. Options at the completion of upper secondary school (the equivalent of 11th grade in the United States) include entering two years of Form six to prepare for university study, enrolling in a teachers' college in a program to obtain a teaching certificate, or going to a college or polytechnic school to obtain a diploma (the equivalent of an associate degree in the United States). Graduates of Form six may enter the university to pursue a Bachelor's Degree.

Another characteristic of the educational system in Malaysia is that the curriculum is mandated by the Ministry of Education. There is a uniformity from school to school in the curriculum which is available to students. Students entering the next level of education come from similar educational experiences.

While this system has been depicted as rigid and uniform, articulation can also be a problem. How can experienced teachers who wish to enter the university to complete additional degree work fit into a university program designed to accommodate students coming out of the Form six preparation program? How can graduates of vocational schools ever pursue additional education? How can one prepare teachers of agriculture when graduates of vocational schools have great difficulty gaining admission for further education? These articulation problems are small, however, compared to those faced by agricultural educators in our country.

Articulation in a Flexible Educational System

Education in the United States is largely a local and state responsibility. Educational systems differ from community to community and from state to state.

Three common pattern of organization are evident in schools in the United States. One pattern has a Grade K through Grade 8 elementary school and a Grade 9 through Grade 12 high school. A second pattern has a Grade K through Grade 6 elementary school, a Grade 7 through Grade 9 junior high school, and a Grade 10 through Grade 12 senior high school. A third organizational structure has a Grade K through Grade 5 elementary school, a Grade 6 through Grade 8 middle school, and a Grade 9 through Grade 12 high school. Within the high school years, some students pursue general education, some take a college

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Articulation and Program Diversity

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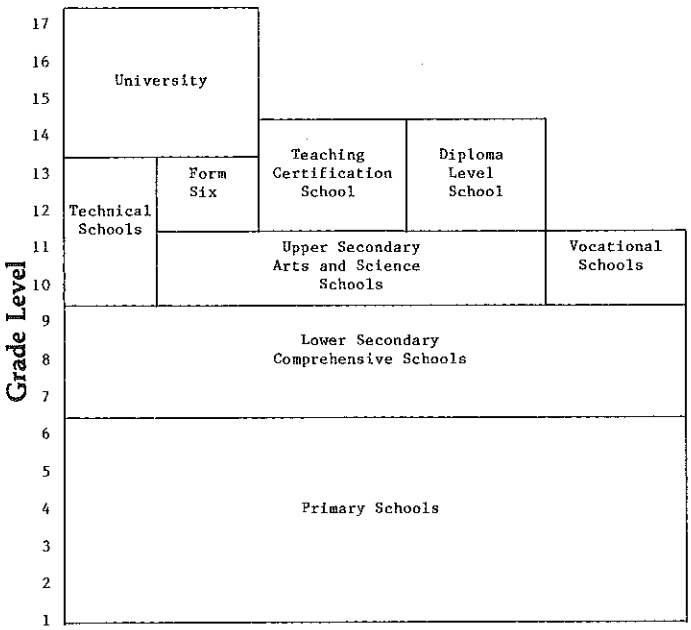

FIGURE 1. Organization chart of educational system in Malaysia (adapted from Aziz and Yow, 1980, p. 111).

preparatory curriculum, and some pursue vocational education. Many students are unable to accurately classify themselves into one of the three categories.

Public school instruction in agriculture has been closely tied to vocational education. Vocational education is offered in comprehensive high schools and in vocational schools. Usually a greater portion of the school day is devoted to specialized instruction in agriculture in a vocational school as compared to a comprehensive high school.

Historically in agricultural education, the program was quite uniform. Standards flowed from federal legislation and guidelines to state departments of education. State departments of education enforced these uniform standards as they supervised local programs of vocational agriculture. The traditional articulation problem has been one of sharing information with post-secondary institutions about the content of instruction in high school vocational agriculture. Figure 2 illustrates the relatively simply articulation situation. Students entering advanced work in agriculture either had or had not taken vocational agriculture in high school.

In the future, the nature of education in and about agriculture will be determined on a local and state basis, just as it has been done traditionally in the other areas of education. This flexibility will result in non-uniform offerings. When there is a greater degree of flexibility and non-uniformity, articulation among schools and programs becomes more difficult.

Articulation in Agricultural Education in the Future

In the future, agricultural education will be offered in some form in some locations at every educational level. Students completing one level of education will enter the next level of instruction. They will enroll in classes with students who will have completed differing amounts of previous preparation in agricultural course work.

Elementary Instruction in Agriculture. Some students will have agricultural instruction in elementary school. This instruction will most likely have been integrated with other subject matter. Agricultural problems may be used in mathematics. Agricultural topics may be used as students practice writing skills. Stories about agriculture may be used in reading. However, other school systems will adopt a curriculum with little content about agriculture. Therefore, some students entering middle or junior high school (Figure 3) will have had quite a bit of instruction about agriculture and other students will have had no instruction about agriculture.

Middle or Junior High School Instruction in Agriculture. At the middle or junior high school level, some students may be able to gain practical experiences in agriculture. These experiences would have been designed to help the students become oriented to and explore agriculture as an occupational area, as a field of study, or simply to gain information about an important industry. Other students, however, may receive no instruction in agriculture at this level.

Senior High School Instruction in Agriculture. It is at the senior high school level that one will be most likely to find the greatest diversity in future agricultural instruction. The traditional vocational agriculture curriculum will continue to be offered in many school districts. This curriculum will be based upon the competencies needed to enter and advance in agricultural occupations.

Some school districts will prefer to instruct students in agricultural science. Scientific principles will be the basis for the curriculum in these programs. Supervised practice may take the form of experiments illustrating these scientific principles rather than the traditional supervised occupational experience programs designed to enable growth into an agricultural occupation.

Honors or advanced placement courses may be developed as a cooperative venture between high schools and post secondary schools or universities. The course syllabus would need to be approved by the college or university offering advanced placement credit. In some cases, the course might be cooperatively developed by university professors and agricultural instructors. Students completing such courses may be required to pass an advanced placement examination conducted by the college or university to receive college credit. In this case, the articulation problems are worked out between the university and high school personnel in a more formal way than has been true traditionally.

Other elective courses at the high school level may include such offerings as the role of American agriculture in an international marketplace, gardening, raising animals in the urban environment, home landscaping, agriculture and food quality, etc. These courses would enable students to gain an appreciation and understanding of agriculture, but the reason for enrollment would be neither because of vocational purposes nor because of scientific purposes. Students would enroll simply because they find study in these areas interesting and meaningful.

Many students will continue to complete their high school programs without any formal study of agricultural subject matter. Some of these students may later choose to study agriculture at a post-secondary level, but many will not.

Post-Secondary Instruction in Agriculture. Faculty and administrators in colleges, universities, technical institutes, and other post-secondary institutions will find students entering their programs from many different types of instructional programs in agriculture. Leaders who wish to reduce this articulation dilemma will want to take steps to assist high schools in developing standard curricula that would prepare students for post-secondary study, and for which students would obtain advanced placement credit. Cooperation between post-secondary institutions and high school teachers could also enable curriculum improvement in agricultural science, vocational agriculture, and elective courses in agriculture.

Agriculture Instruction Before High School. High school teachers of agriculture can exert leadership in developing elementary and middle-level instruction in agriculture in much the same way as a post-secondary teacher can assist high school teachers. The high school agriculture teacher possesses the expertise and interest in insuring that students are agriculturally literate. An impact can be made in this area as teachers involve themselves in local district curriculum decisions.

Summary

Agriculture is changing. Fewer students have an agricultural background. Education is also changing. This greater emphasis allows less time for elective courses such as agriculture. The work force of the future requires more people with agricultural expertise than can be provided by only those with an agricultural background. More students must have the opportunity to enroll in agricultural course work. National and state commissions are exploring ways to expand agricultural instruction beyond the traditional program of vocational agriculture. This increased program diversity will bring about greater problems in articulating programs across educational levels. However, there may be greater opportunities for high school instructors to influence the curriculum at elementary and middle school levels, and for post-secondary instructors to influence the curriculum at high school levels. The challenge for all teachers is to involve themselves in shaping the nature of agricultural instruction for the future.

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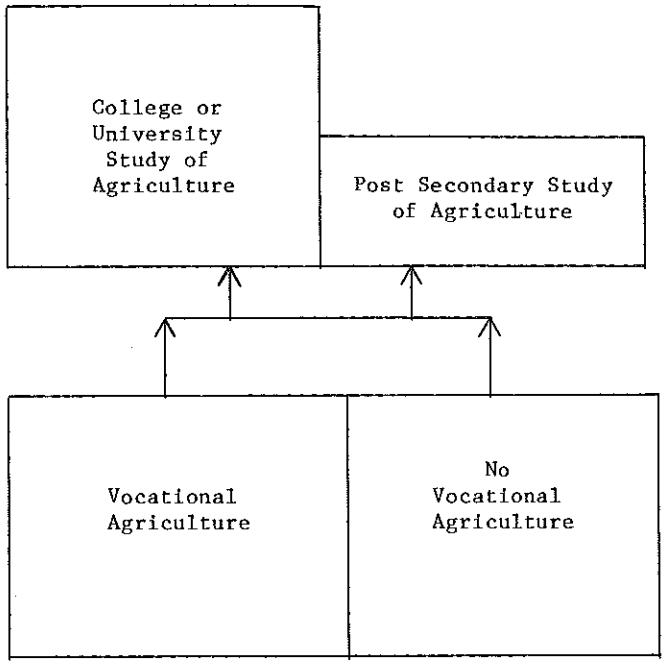


FIGURE 2. Traditional articulation problem faced by agricultural educators.

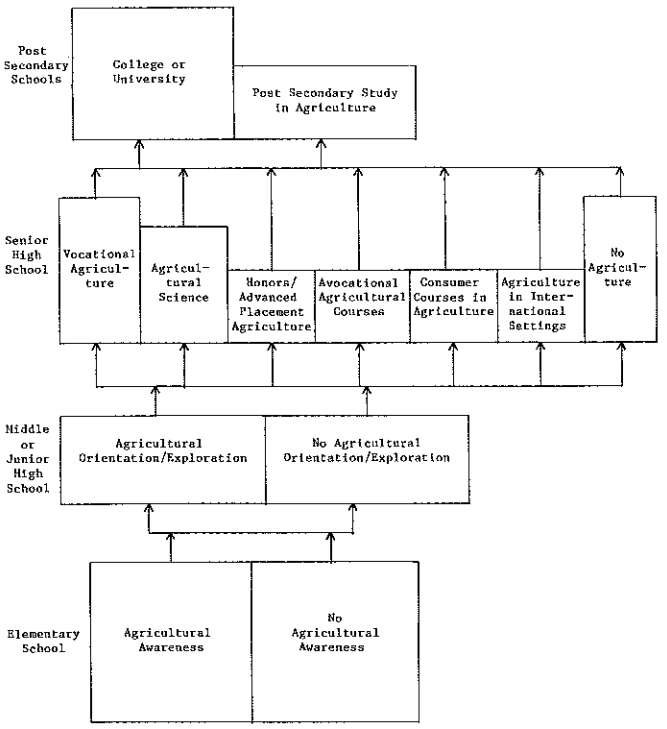


FIGURE 3. Articulation problems which may be faced by agricultural educators in the future.

Success In College and Participation In Secondary Vocational Agriculture

Do students who participate in vocational agriculture programs at the high school level do as well in a college of agriculture curriculum at the university as students who participated in college preparatory programs in high school?

One Study Said YES!

Students who had senior standing in the College of Agricultural Sciences at Oregon State University were involved with a study that identified their high school preparation and their GPA in college as of spring term of their senior year. Students provided input on several items. University records were checked for additional data. Potential employers were interviewed to identify whether or not participation in vocational agriculture at the high school level was a benefit or a detriment to students who were completing degrees in the College of Agricultural Sciences.

Choice of Major

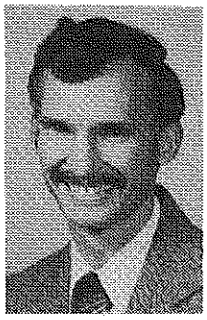
Students reported that participation in high school vocational agriculture programs significantly influenced their choice of major, but had no deterring impact on their decision to attend college. Similarly, when students who had participated in the high school college preparatory program were compared with those participating in the high school vocational agriculture program regarding how well they perceived their preparation for doing the academic work required of them for their major, there was no statistically significant difference in the responses of the two groups.

Years to Graduate

When students were asked about the number of years it took to complete their majors and whether or not they changed majors, it was found that students who participated in vocational agriculture took 4.50 years to complete their degrees. Students who participated in college preparatory programs took 5.17 years. Students who took vocational agriculture in high school changed majors significantly fewer times than those in the college preparatory curriculum. Comments from employers concerning this issue were primarily that, "Students who participate in vocational agriculture programs seem more goal oriented and self-directed." The findings of the study and comments from employers are therefore in concert with one another regarding this issue.

Grade Point Average

Grade point averages were identified for students and checked using university records. Final graduating accumulative GPAs for seniors in the College of Agricultural Sciences who participated in vocational agriculture or college preparatory programs at the high school level were not significantly different. Likewise, there was no statistically significant difference in the two groups regarding the grades earned in their college writing, math, science, social science, humanities, or technical agriculture courses. This finding becomes a strong indicator of the comprehensive nature of vocational agriculture programs currently being offered at the high school level.



By Lee Cole

(Dr. Cole is a Professor of Agricultural Education at Oregon State University, Corvallis, Oregon 97331.)

Employment Opportunities

A final concern addressed by the study sought input from both students and potential employers. We wanted to know if participation in the respective high school preparation programs would have any potential effect on the employability of graduates. The college students who participated in vocational agriculture in high school indicated that through job interviews and other sources that their vocational agriculture preparation would add to their ability to secure employment after college. Those who participated in the high school college preparatory program did not feel that their high school background would contribute to their ability as a college graduate to get a job. The response differences between the two groups were statistically significant. Likewise, employers confirmed that they preferred college graduates with strong high school vocational agriculture backgrounds. Employers felt that students with high school vocational agriculture backgrounds established credibility with customers more rapidly, had better total backgrounds in agriculture, possessed better human relations skills, and demonstrated a better work ethic.

Summary

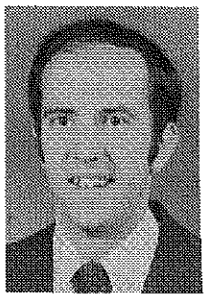
It appears that high school vocational agriculture programs contribute substantially to a college of agriculture graduate's background and potential for employment success. There appears to be little, if any, detrimental effect to participation in high school vocational agriculture when a student plans to attend college and major in a College of Agriculture degree area. It is, therefore, recommended that students with occupational objectives in agriculture which require College of Agriculture degrees be encouraged to par-

tipate in the entire vocational agriculture program at the high school level. These students could supplement their vocational agriculture with as much college preparatory coursework as possible, but the emphasis should be on attaining all the vocational agriculture program has to offer.

It is further recommended that artificially contrived college entrance requirements based on high school course completions be re-examined with regard to their overall validity. It appears that there are factors more powerful than prerequisite high school coursework which determine the success of students in college (at least a College of Agriculture).

THEME

Are We Articulating The Training Needs of Agribusiness?



By Jim W. Legacy and Lawrence E. Jeralds

(Dr. Legacy is a Professor of Agricultural Education and Mechanization and Vocational Education Studies, and Dr. Jeralds is an Assistant Professor of the College of Technical Careers at Southern Illinois University, Carbondale, Illinois 62901.)

Are we articulating the training needs of agribusiness in the high school classroom? High school vocational agriculture was originally established to train future farmers. As the number of farms has declined, enrollment in high school vocational agriculture programs has dropped. Today, agribusiness needs fewer farmers but more nonfarm workers. High school vocational agriculture programs have been known for their ability to prepare future farmers. How are these programs responding to the added role of preparing nonfarm workers? A survey of Illinois high school students enrolled in vocational agriculture was conducted to answer this question. High school agriculture teachers were asked:

1. *Are nonfarm students enrolled in vocational agriculture?*
2. *Are vocational agriculture graduates seeking careers in agriculture?*

Question One

How many students enrolled in vocational agriculture are nonfarm students?

Teachers reported that 59% of some 9,035 high school agriculture students were nonfarm students (See Figure 1).

In Illinois, 23 out of every 100 jobs are agriculture based (Imagine Agriculture, Springfield, Illinois, 1988). Two of the 23 agricultural positions are farmers. With agribusiness as a major source of employment, agribusiness education should be an important part of the vocational education programs in Illinois. As late as 1963, all students enrolled in agriculture classes **had** to be farm students. A great change has occurred. Now, in Illinois, fewer than half of these students are farm students. However, if the vocational agriculture classroom is to be representative of the work place, 90% of the students should be nonfarm students.

Question Two

Are vocational agriculture graduates placed in agriculture?

Teachers reported that about half of some 2,064 program graduates were placed in agribusiness (See Figure 2).

Many graduates of high school vocational agriculture programs are seeking careers outside of agribusiness. (See Figure 3).

Many new jobs have been created by recent technological changes in agriculture. Vocational agriculture teachers need to be aware of these changes while articulating nonfarm job possibilities in the classroom.

With the decline in the number of farms, the agricultural community has had to make major adjustments in operation and marketing. Agriculture as an industry has been through drastic changes in the past 10 years and the agricultural community has made major modifications because of an everchanging economic environment ("The Future," 1986). These changes have made agribusiness a more complex and highly technical profession. New occupations have been born with these changes.

For example, the use of computers is now a part of nearly every agricultural occupation. High school and college agriculture programs have had to keep pace with changes in agribusiness. The task of providing good career information about agribusiness is especially difficult for the high school vocational agriculture teacher. Colleges and universities which offer professional training programs in agriculture could provide a good source of career opportunity information for high school vocational agriculture

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Are We Articulating The Training Needs of Agribusiness?

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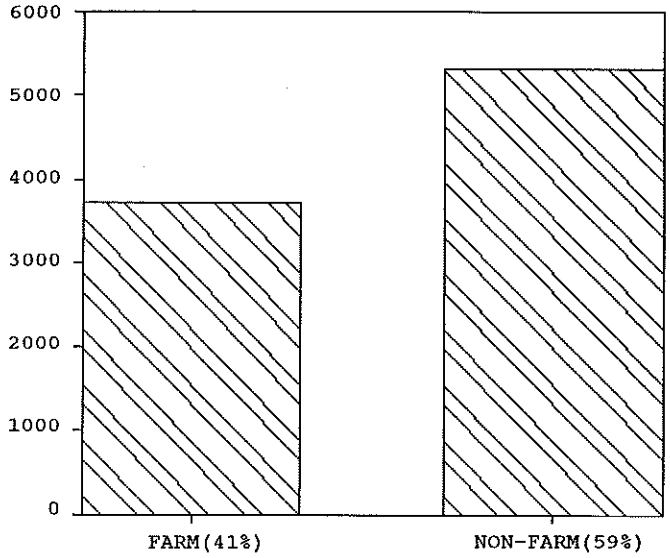

Figure 1 — Comparison of 1986 Illinois High School vocational agriculture students.

teachers. Perhaps this type of top-down articulation of career information will keep high school graduates interested in agricultural occupations.

Summary

Sixty-one percent of Illinois vocational agriculture high school students are from nonfarm backgrounds. If program enrollment is to be maintained or increased, more nonfarm students are needed. We also found that nearly one-half of all vocational agriculture graduates are seeking careers outside of agriculture. If the new occupations emerging in agriculture are to be filled with vocational agriculture students, teachers need to articulate career information with industry.

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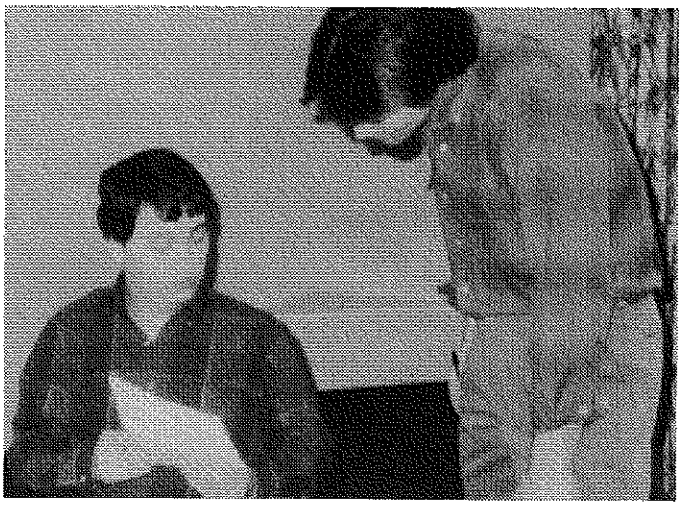
Training will prepare future agribusiness workers.



Individualized counseling may be effective in retaining high school vocational agriculture students in agribusiness after high school graduation. (Photos courtesy of the authors).

Figure 2 — Comparison of 1078 Illinois High School vocational agriculture graduates pursuing agricultural careers.

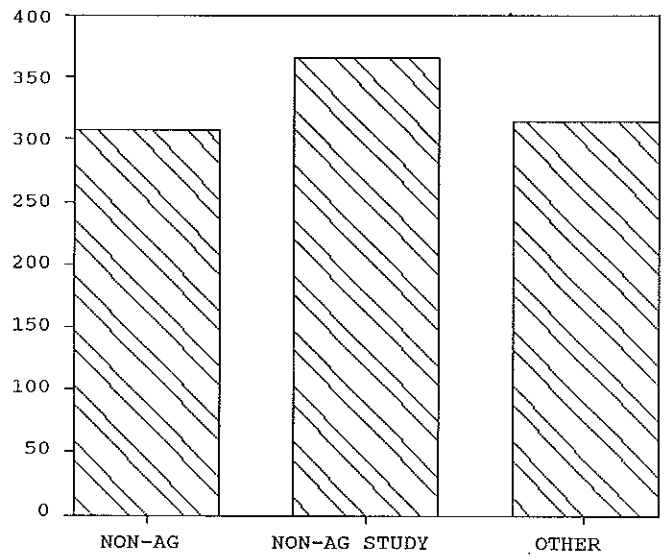


Figure 3 — Comparison of 986 Illinois High School vocational agriculture graduates pursuing non-agricultural careers.

ARTICLE

Learning Styles of Students In Vocational Agriculture

As teachers of vocational agriculture, you go through the typical school day teaching five or six classes in addition to the myriad of other chores which occupy your time. Many teachers have taught enough so that when it comes to the actual task of teaching, it is approached as a routine thing. When was the last time you asked yourself, "How is the best way to teach this lesson?" Another way to view this situation is to ask the question, "How do these students learn?" If we are able to identify and describe the learning styles of students, then we can employ teaching methods which may lead to better learning by students.

By David E. Cox

(Dr. Cox is an Assistant Professor in the Department of Agricultural Education, College of Agriculture, at the University of Arizona, Tucson, Arizona 85721.)

Learning Styles in General

Learning styles of high school students vary among individuals and groups. Individuality in learning exists in today's classrooms. However, patterns of learning style behaviors are evident to the astute teacher. For example, certain students become actively involved in verbalizing thoughts while others prefer hands-on experiences. Still others may appear to the teacher to passively absorb their environment. These behaviors are consistent with patterned styles of learning.

The concept of learning styles is fairly recent in origin. A learning style, basically, is the way each person absorbs and retains information and/or skills (Dunn, 1984). The original research dealing with learning styles was done with adults by D.A. Kolb (1984). He identified four different modes of learning: (a) concrete experience abilities; (b) reflective observation abilities; (c) abstract conceptualization abilities; and (d) active experimentation abilities. These learning theories were modified and tested on a sample of home economics students using the *Secondary Learning Styles Inventory* (Kendall, 1986). As you might predict, learning styles of secondary school students differ from those of adults. In fact, there is so much difference that six rather than four learning styles of secondary school students were identified. Those learning styles have been grouped and named as follows: (a) serious, analytical learner; (b) active, practical learner; (c) observation-centered learner; (d) passive, accepting learner; (e) concrete, detail, fact-oriented learner; and (f) non-adaptive, struggling learner.

Learning Styles of Vocational Agriculture Students

During the spring of 1986, vocational agriculture students in Arizona participated in a study to further analyze their preferred learning styles. The group of students who participated was 32% female and 68% male. Thirty-nine percent of the students were in 9th grade, 28% were in the 10th, 20% in the 11th, and 13% were seniors. Forty-three percent were 14-15 years old, while the other 57% were 16-18 years old. The six learning styles identified in home economics students were also identified in this large group of vocational agriculture students. So, it was concluded that high school students learning styles are fairly consistent yet different from those of adults.

To summarize the group of students, about six of 10 students viewed themselves as "serious, analytical learners," as evidenced by the 57% to 73% who agreed with the statements which measured this characteristic. Further, about three-fourths of the subjects preferred "active, practical learning" (experiments, actually doing things). Likewise, over two-thirds preferred observation-centered learning as well. This may suggest a learning style that features "first observe, then do" is appropriate for the majority of vocational agriculture students. The demonstration teaching method that is used by teachers of vocational agriculture appears to be sound.

Lesser used learning styles, and perhaps learning problems, appeared in a substantial proportion of students. For example, a large segment (perhaps 20% to as much as 35%) often prefer passive learning. Students with such a learning style may contrast sharply to the more active student learners in your program and need special attention. A similar proportion appeared to be "detail, fact-oriented" learners; however, note-takers and fact-gatherers appeared to be a small percentage in these classrooms (17%). Finally, a substantial number of students, perhaps 20% or more, may be "non-adaptive, struggling learners." This is a speculative characteristic, measured by only two items, but it is one of which teachers need to be both aware and sensitive.

Variations in Learning Styles

In trying to determine if certain factors affect a student's preferred learning style, differences based upon grade level, years of vocational agriculture completed, and gender were analyzed.

There are significant variations in learning styles across grade levels. The findings indicate important grade differences for two of the six learning styles — "serious, analytical learner"; and "active, practical learner."

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Learning Styles of Students In Vocational Agriculture

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Preference for these styles appears to increase with grade level. Perhaps this indicates that general interest in learning increases through the grades. It may also be a result of attrition of the less serious students who employ other learning styles.

Also, major variations exist in preferred learning styles by years of vocational agriculture completed. In general, preference for "serious, analytical learning" and "active, practical learning" appears to increase with years of vocational agriculture completed, particularly with four-year completers. Students also appear to become less passive and accepting learners in later years. These findings indicate that more advanced, multi-faceted learning strategies of a practical and/or analytical nature may be employed with more experienced students. Examples of these learning strategies include problem solving, reasoning, decision making, interpreting, etc. It also appears that if teachers utilize instructional techniques tied to such learning styles, the activities will be well-received by the large majority of students. Students who completed more years of vocational agriculture coursework were more "concrete, detailed, fact-oriented learners."

Male students were more likely to prefer actual, hands-on, manipulative experiences in learning than females. Male students in vocational agriculture were less inclined to prefer note taking and factual learning than females. Female students were less likely to prefer experimentation and breaking subject matter down into detailed, separate parts. A slightly higher proportion of males than females appeared to prefer observation-centered and passive learning styles.

In Conclusion . . .

Current instructional practice in vocational agriculture seems to concentrate a majority of time in classroom instruction rather than practical exercises during the first two years. Likewise, during the junior and senior years, in general, more time is devoted to practical laboratory and "hands on" activities outside the classroom. This research indicates that as students complete more years of vocational agriculture, their learning style becomes more concrete, detail, fact-oriented. Also, a substantial portion of first and second year students who are 14-15 years of age are active, practical learners. Hence, it should be considered by teachers to incorporate additional hands-on, experiential, and actual performance activities into the first two years of instruction. In addition, teachers should consider incorporating additional "informational lessons" and multifacted/analytical and problem-solving teaching strategies into the last two years of instruction in vocational agriculture. Do you see any similarities between your students and these results?

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BOOK REVIEW

PROTEIN CONTRIBUTION OF FEEDSTUFFS FOR RUMINANTS: APPLICATION TO FEED FORMULATION, Edited by E.L. Miller and I.H. Pike in association with A.J.M. Van Es, Woburn, Massachusetts: Butterworths, Inc., 1982, 160 pp., $39.95.

PROTEIN CONTRIBUTION OF FEEDSTUFFS FOR RUMINANTS is based on proceeding of the fifth European Symposium organized by the International Association of Fish Meal Manufacturers in Amsterdam. This collection of ten papers, which addresses the status of nitrogen metabolism in ruminants, was presented by leading research workers from Western Europe.

The complexity of ruminant diet formulation is explored in great detail taking under consideration the dynamic ecosystem of the rumen to the many interrelationships of ruminant metabolism, forage/concentrate ratio, pH, variation, and supply of volatile fatty acids, as well as many other essential factors.

Beginning and setting the tone for the papers to come, the first paper elucidates the background on new advances and perspectives on protein evaluation and nitrogen metabolism.

Paper two investigates energy/protein relationship with rumen fermentation and post ruminal utilization.

Progressing, papers three through six concentrate on assessing and evaluating feedstuffs for protein values and how protected proteins and amino acids are essential for ruminant utilization. A considerable amount of the content is dedicated to digestibility and methods used to reduce protein degradability.

Paper seven dwells on the interrelationship of protein and energy for growing and lactating cattle; whereas, paper eight summarizes feeding trials of high yielding cows supplemented with fish meal.

In closing, papers nine and ten conclude and summarize the symposium as it related to the formulation of practical diets for ruminants.

Although PROTEIN CONTRIBUTION OF FEEDSTUFFS FOR RUMINANTS is written at a technical level and contains many feedstuffs of a European nature, it would serve as an excellent reference for those persons conducting investigations into ruminant nutrition.

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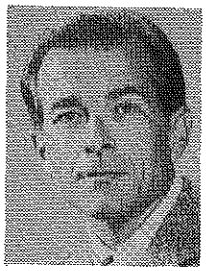
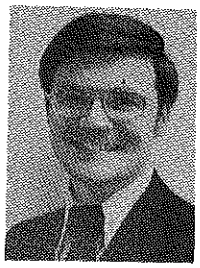
ARTICLE

Using A Database As A Tool In Problem Solving





By Timothy J. Rollins and W. Wade Miller

(Mr. Rollins is a Graduate Teaching Assistant and Dr. Miller is an Associate Professor in the Department of Agricultural Education at Iowa State University, Ames, Iowa 50011.)

Upon dismissing your class, Nancy, one of your students, remains behind to talk to you about several problems she has encountered while working at Joe's Feed and Seed store. It seems that the manager wants her to visit all the customers in a certain area and to plan a meeting of these customers to familiarize them with a new product that has been released. She will also be responsible for creating a mailing list and notifying the customers of the meeting.

As you ponder this question, Nancy asks you to help her plan her sales route. Nancy needs to visit farmers who live within a geographical boundary and who also raise at least 1,000 market hogs per year. Her assignment is to put together a plan for the sales route which will require the least amount of travel time.

The manager has also shared with Nancy that Joe's Feed and Seed is facing narrow profit margins and needs to make better management decisions. Several customers are credit risks. The manager has stated that one possible solution is not doing business with these customers. The manager has asked Nancy to come up with possible solutions to this problem.

Do these problems reflect the real-world kinds of problems faced by many of our students in their supervised occupational experience projects? Can agriculture instructors use effective teaching methods, taking advantage of the latest technology in their classroom, to solve the problems presented by Nancy as well as many other students? The reality is that all of these activities are typical of problems that may need to be solved on an everyday basis in many businesses where our students are currently working or will be employed in the future.

Problem solving has long been associated with vocational education in agriculture. Phipps (1980) stated that problem solving was an effective means of developing and securing desirable learning. Binkley and Tulloch (1981) also emphasized that much that is called problem-solving in teaching is not problem-solving. They define problem-solving as, "The task of making decisions or doing things the learner wants to make or do, the nature for which the learner is able to understand, but for which at the time has no solution" (1981, p. 79).

If we accept this definition and the premise that problem-solving is an appropriate teaching method to use in our instructional program, we can maximize the effectiveness of one aspect of technology available in the "electronic classroom" for agricultural education — using computer databases as an educational tool for problem-solving. Before beginning, though, let's describe databases and discuss how they are probably being used by most agricultural educators.

A database is a computer program designed to allow the user to enter, sort, organize, and retrieve knowledge-based information about a particular subject. The information stored in the database can be accessed by the individual through the computer to assist in the process of problem-solving. We are probably most familiar with the use of a database to generate a mailing list of FFA members, to store class records, grades, or to record supervised agricultural experience program activities.

However, the value of a database program is not solely as an administrative tool or management device in accomplishing the daily activities of agriculture instructors. Besides being useful for teaching "computer literacy," a database can be easily incorporated into a computer-based instructional program or course. Perhaps the ultimate use of a database in agricultural education is as a tool to teach students in small groups or individually about concepts and facts associated with a subject such as agribusiness management.

A computer simulation entitled Joe's Feed and Seed Company was developed from the AppleWorks (1983) program for the Apple II family of computers to assist teachers in using databases to teach agribusiness management concepts. The AppleWorks program was particularly suited to the task because it is an integrated program consisting of a word processor, database, and spreadsheet. These programs represent the three most important applications of computer software used by today's businesses.

The objective of the materials that were developed was to simulate some functions of a small agribusiness. Students were asked to assume different roles in the Company. The students are asked to solve problems posed by the employer and make business decisions. The simulation consists of six database files, and instructions on how to use the simulation in the classroom.

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Using A Database As A Tool In Problem Solving

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The database files are designed to be similar to the files one might find in a typical small feed and seed store. These files consist of the following:

a. An active customer file consisting of biographical data, farm information, purchases from the previous year, and the financial or credit status of their account.
b. Cash receipts files for a designated period of time. These files contain an entry by entry breakdown of the business for each month.
c. An employee file consisting of biographical data, employment record, salary, benefit list, education, training, vacation record, and sick leave record.
d. A "Hot Prospect" file of Joe's Feed and Seed's most sought after prospects. This file contains biographical information, farm information, and the name of their present supplier, if known.

The teaching materials utilized a problem-solving format to assist teachers in teaching students to develop thinking skills. The overall format includes: objectives, a description of the situation, a statement of the problem, procedures to be followed, and specific questions to be answered. In each activity, students are required to use the database to sort for the correct information and prepare a report, invoice, or list to solve the problem.

Now, let's see how an agriculture instructor might help Nancy plan her sales route so she can spend the least amount of travel time on the road. She also needs to know what the farmers raise so she can take the proper sales materials with her and contact prospective customers. Using the database files from Joe's Feed and Seed Company, Nancy will place two files on the Desktop: the Active Customer (ACTCUST) file and the Hot prospect (HOTPROSPECT) file. She will access these files to find the customers in the particular geographical area who raise more than 1,000 head of hogs per year.

Once Nancy is in the ACTCUST file, she selects "township" as one of the comparisons the database will make for her to contact her customers. When "township" is selected, she next types the name of the township to which she wishes to travel. The next comparison information Nancy selects is "swine head/year" and then she selects "greater than" and enters "1000."

The data base automatically compares the requests entered by Nancy and displays on the screen the names of four farmers in the selected township who raise more than 1,000 head of swine per year. She also has accessed the HOTPROSPECT file and discovered the names of two more farmers in the township to whom she will need to take sales materials describing swine and dairy feeds. She obtains a printed copy of the farmers' names, addresses, and size and type of their operations.

The process Nancy completed to obtain this information took approximately five minutes using Joe's Feed and Seed Company database files. With a database program, students are able to define and represent important aspects of a problem, develop alternative plans of action, making informed decisions about the information they have requested, and act upon their decisions in an appropriate manner.

John Rygh, a 1987 National Computers in Agriculture Seminar participant, demonstrating how he uses databases and related files for various irrigation applications. (Photo courtesy of Dwight Horkheimer, National FFA Center.)

This is just one example of how a database can be used by students to access knowledge-based information they need to solve a problem presented to them. The power and versatility of database applications make them a very practical tool for use in the "electronic classroom." Joe's Feed and Seed Store is just one example of how databases can be constructed and utilized in agribusiness management to teach concepts, facts, and problem-solving. Applications in other subject matter areas, especially topics in plant and animal science, horticulture, and agricultural mechanics, can be easily designed and constructed with a little creative thought.

The use of database applications provides students with not only those skills associated with "computer literacy," but also teaches students how to use facts and concepts they need to solve everyday problems with which they are confronted. Isn't it about time you consider the use of database applications in your instructional program?

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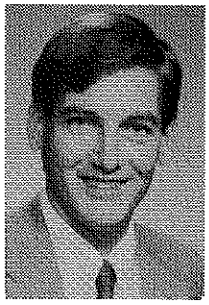
ARTICLE

Are You Ensuring Student Safety?



By Matt Baker

(Mr. Baker, formerly a vocational agriculture teacher at Idalou, Texas, is a Graduate Associate in the Department of Agricultural Education at The Ohio State University, Columbus, Ohio 43210-1099.)

Pupils are seldom injured while in the traditional classroom. It is logical to assume, however, that when teaching and learning activities take place outside the safe environment of the traditional classroom, the chances for accidents and pupil injuries increase. Most vocational agriculture teachers and students spend an enormous amount of time engaged in instructional activities in the laboratory setting. The purpose of this article is to examine the history of student injury litigation, report common defenses to negligence charges, and suggest guidelines worthy of vocational agriculture teacher consideration in determining their departments' student safety status.

History of Student Injury Litigation

Negligence is the legal charge most commonly associated with cases involving student injury. Prior to 1950, suits against teachers involving student injury were virtually nonexistent. The Doctrine of Governmental Immunity protected teachers from student injury litigation. The first exceptions to governmental immunity were a result of litigation involving student injury related to corporal punishment and motor vehicle accidents. It was at this time that many state lawmakers developed state statutes that limited governmental immunity or abolished the notion altogether.

In states which have abolished governmental immunity, negligence charges are automatically taken to state trial court for remedy. In the states which have limited governmental immunity, student injury related to corporal punishment and automobile accidents are generally excluded from the immunity. It is important to note that in cases of proven gross vocational agriculture teacher negligence, a particular case might be exempted from such immunity or such a case might result in the courts abolishment of the statute altogether. It would be an understatement to say that the courts are extremely sensitive to issues involving student injury.

Defenses to Negligence

Thurston (1982) suggested that for the injured party to plead and be successful in proving negligence, one would have to use the following criteria: 1) duty of care, 2) breach of the duty, 3), causation, and 4) actual damages. The duty can be statutory or common law. A breach of duty is failure of one party to care for the other. This breach can be by act or omission. Causation is the connection between the misconduct and resulting injury. Actual damages are proved where the neglected party shows loss or damages.

Sparkman (1984) stated that there are five defenses to negligence: 1) contributory negligence, 2) assumption of risk, 3) pure accident, 4) acts of God, and 5) immunity.

Contributory Negligence

A trial judge found a school district 25% negligent in an instance when a student was injured at school (Viveiros v. State, 1973). The assumption was that the girl contributed 75% to her injury. The Hawaii Supreme Court overruled the trial court in deciding the girl was not contributorily negligent in her actions, and thus, the school district could not assert contributory negligence as a defense to the suit.

Assumption of Risk

Assumption of risk is a defense often used in cases involving laboratory related accidents. A defense of assumption of risk can generally not be used in conjunction with the defense of contributory negligence. Nineteen states have "seriously modified or abolished" the assumption of risk argument (Thurston, 1982).

Pure Accident

Pure accident is simply common law doctrine which recognizes students will have accidents and be injured with no one being at fault. The highest court in New York considered the pure accident defense in a case where the parents of a child tried to prove teacher negligence when the student was hit in the eye with a snowball (**Lawes v. Board of Education of the City of New York,** 1965). The court stated, "A school is not liable for every thoughtless or careless act by which one pupil may injure another."

Acts of God

An unexpected natural disaster such as a tornado or an earthquake is considered an act of God.

Immunity

Immunity as a defense can be either common law or statutory. It is important to understand that if the school in a particular state have governmental immunity, the employees of that district may or may not be covered by the immunity.

Guidelines For Student Safety

Vocational agriculture teachers need to give serious consideration to the following.

1. Adequate instruction should be provided by vocational agriculture teachers including proper instruction on use

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Are You Ensuring Student Safety?

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of tools, procedures of operation, personal demonstration, basic safety, and first aid.

2. Vocational agriculture teachers need to stay abreast of litigation involving teacher negligence in the state in which they teach as well as in other states.
3. Proper supervision should be given to students in the non-traditional classroom. How many students an instructor may properly supervise depends upon such things as area of work, history of class, and specific job being done by students.
4. All student activities should be curriculum driven. If the curriculum states that students are to arc weld in the second year of vocational agriculture, that is where they should be found arc welding.
5. A safe place should be provided for students to work. A safe place has properly wired equipment, guards well maintained on equipment, ample space for work, and a well lighted work area.
6. Close teacher and parental supervision should be provided during extra-curricular and after school activities.
7. Overmatching and mismatching should be avoided. A physically small freshman student should not be assigned the task of restraining and administering drugs to a 1,200 pound calf.
8. Vocational agriculture teachers should always operate within their job descriptions. If local job descriptions and policy are unknown, one should seek this information.
9. Students with known physical or mental ailments should be monitored closely.
10. Vocational agriculture teachers need to make the public more aware of their function and purpose. Commmunity involvement is essential to the protection of the program.
11. Students do not come to school to run errands or to be used as janitors.
12. Vocational agriculture teachers should take full advantage of membership in their professional organizations. Most professional organizations offer professional liability insurance and legal representation at very nominal prices.

Conclusion

The area of vocational agriculture teacher negligence in the non-traditional classroom is very complex. Laws vary from state to state. One should keep in mind that applicable laws were developed to protect students, not punish teachers. Teachers have the responsibility to conduct themselves in a professional manner. That is not to say that even the most professional vocational agriculture teacher will not have students who are injured from time to time. However, if the teacher has a professional track record, the chances are slim that litigation will result in any significant financial recovery. Carl Morgenstern (1983), writing in the *Ohio Northern University Law Review*, summarized the negligence issue best by stating: "The best protection available to school officials is to act in good faith as a reasonable (person) would act under all the circumstances. His (or her) fate will then rest with the jury, which is also composed of reasonable men and women. No one can ask any more of our legal system."

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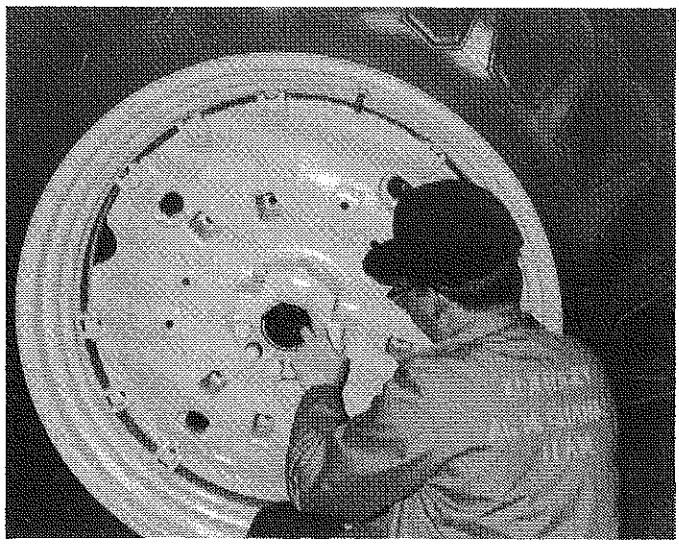

A member of the Kentucky National Agricultural Mechanics team prepares to adjust the wheel spacing on a John Deere 2550 tractor. Safety is always a concern when students perform such adjustments. (Photo courtesy of Glen Miller, University of Arizona).

1989 Themes

Issue	Theme	Theme Editor
January	Involving Industry - Ag Mechanics	Glen Miller, University of Arizona
February	Agriscience and Emerging Technologies	Barbara Malpiedi, N.C. State University
March	Coping with Competencies	Daniel Brown, Ellsworth (Iowa) Community College
April	International Development Education	Robert Martin, Iowa State University
May	The Profession Reacts — National Study	Stacy Gartin, West Virginia University
June	Vitalizing Summer Programs	Larry Jewel, N.C. State University

ARTICLE

Serving as a Lobbyist for Vocational Agriculture

By Brenda Noland

(Ms. Noland is a Lobbyist for the Louisiana Vocational Agricultural Teachers' Association, P.O. Box 44032, Capital Building, Baton Rouge, Louisiana 70804.)

This is a true story of what was happening to the Louisiana vocational agriculture teachers when I was first introduced to them.

Nothing has been changed to protect myself or my totally innocent vocational agriculture teachers. I take full credit for the contents of this article. Any opinions formed regarding the Louisiana Department of Education are strictly my own.

The legislative committee of the Louisiana Vocational Agricultural Teachers' Association interviewed for a lobbyist in mid 1986. I was one of five lobbyists applying for the position. I do not remember much of the interview or what transpired during it except that I was outraged by what was happening to this group.

Background

Vocational agriculture is a department within the Department of Education, a department of state government ruled by the Department of Education. Vocational agriculture was entrusted to the administrators and was totally dependent on them for legislative protection. Since 1983, the Department of Education had been using the department of vocation education as a buffer for any legislative cuts in an effort not to cut their own inflated salaries or eliminate their "fat cat" positions in the administration.

Louisiana has had a long four years with our, soon to be gone, administrators of the Department of Education. It is painful, indeed, to think of the demise of some of the best educational programs and people this state has lost. Fortunately, vocational agriculture survived.

It is hard to break old habits when they involve feelings of faith and trust. The teachers had placed their trust in the hands of the administrators to serve as their liason between them and state government.

The vocational agriculture teachers had no rights to speak for themselves. They were at the mercy of administrators whose priorities were not those of vocational agriculture programs. The administrators were having a field day with appropriated state funds and vocational agriculture were progressively being cut from the state budget. Vocational agriculture teachers were not aware of appropriations committee meetings, therefore, no one showed up to oppose the proposed cuts in funding for vocational agriculture.

Try as they did, the teachers were not being given a say in legislative matters. This is what projected the teachers to hire a lobbyist.

LVATA's Lobbyist

When rumors spread that the Vocational Agriculture Teachers' Association was hiring a lobbyist, things started getting hot for the director of vocational agriculture. He was put under a lot of pressure and constant harrassment. He was advised to discourage the hiring of a lobbyist.

At one point, the director was requested to appear before a legislative committee for informational purposes. The administration department refused to allow him to attend.

The Louisiana Legislature has its way of insisting. If necessary, legislators have the authority to have a summons drafted and the Sergeant At Arms will deliver it and escort you to the committee.

I did not especially like having our director arrested and consequently, it was not necessary.

I knew the Department of Education did not want to do battle with the House of Representatives, because the Superintendent of Education was at war with the Governor and under indictment for the misuse of state funds.

The administrative staff under-estimated my knowledge of legislative procedures. I was a worthy adversary. The teachers had not known the rules, but I did and intended to use them.

In the beginning I tried to work with the administrators to form some kind of alliance that would benefit all, but they were not willing to cooperate. They were not going to make it easy for me to come into their domain and question their authority. So, I became the loose cannon for the teachers.

I started monitoring each committee. They were ever aware of my presence. I had taken their element of privacy. They knew from then on everything they would do would be public and therefore, they chose not to be exposed by a trigger-happy lobbyist.

When one battle ends, another begins. The teachers were now established. It was time to move forward and recoup some of our losses.

As we went into the 1987 Legislative Session, we had lost 10 days of extended employment totaling $356,000; travel and expense money totaling $275,000; funding for Food Processing Programs totaling $496,000; two weeks paid vaca-

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tion; and ten out of 13 administrative level positions (not to mention federal matching funds).

You have never paid money to see a better circus than the one the Louisiana Appropriations Committee put on in 1987. Rules and procedures did not apply. You were there on guts alone.

It was an election year and the state had over a $500 million dollar deficit. This created total confusion among legislators.

Because of the quality of vocational agriculture teachers and their programs, and I'd like to think my effectiveness as a lobbyist, we were among the few lucky groups who received some state funding.

A Few Successes

We re-instituted our Food Processing Programs with basic funding of $200,000 to keep the program alive. Our bill for $617,000 representing extended employment, supervision, and equipment was put in Category A and was intended to be vetoed into the appropriations bill by the Governor (it did not get vetoed because of an oversight by the Governor's executive counsel). We were subjected to a 5½% executive cut but were exempt from it by the Governor.

This may not appear to be a big victory, but because so many worthy and qualified programs were completely eliminated, we felt extremely lucky and proud of our efforts.

What I do for the Louisiana Vocational Agricultural Teachers is provide year round protection on all legislative matters. I am their public relations contact person to the state legislature and all statewide elected officials. I promote vocational agriculture, their programs, and the FFA in order to qualify the funding allocated by the state to these programs. I am a source of information to the legislators on all matters regarding vocational agriculture. I serve the state officers as a consultant on all legislative matters, especially in areas of procedure. Mainly, I am each vocational agriculture teacher's voice to state government. I hold government accountable to them.

I believe in vocational agriculture, its quality of programs, and its credibility.

Words of Advice

I am asked what advice I would give to vocational agriculture teachers in other states regarding legislative programs. I am not deluding myself in believing the quality of person that is exemplified in the Louisiana vocational agriculture teacher is limited to ours or any other geographical area. I would advise you to rely on the merits of your teachers and their programs. Sell yourselves. Take credit for the good work you do. Be a compliment to the other good programs in your state. Be as visible in your community as possible. Legislation begins at home. Work with the programs in your communities. Establish agricultural programs, and cater to a good rapport with your local school board, superintendent, and legislator.

If you can hire a lobbyist, choose one that compliments your organization. A lobbyist should be knowledgeable of your programs and have more than a monetary interest in your organization. Your lobbyist should have a good working relationship with all state legislators.

Louisiana FFA officers and their vocational agriculture teachers are the best examples of successful programs. Here they are shown being presented to the Louisiana State Senate. Senate President Sammy Nunez asked for special permission to turn the floor over to 1986 FFA President Chase Sutton. Such a privilege is rarely offered during the legislative session.

Your local legislator can be your best assistant in the legislature. He or she can advise you and your lobbyist as to what action needs to be taken and the proper procedures to follow.

It is important for you to assist your lobbyist by participating in organizational meetings. You should be a source of information regarding changes in your programs and needs in your local area. Give your lobbyist the statistics and tools to sell you and your programs in the best positive way. Give as much support as possible. But, do not ever totally rely on one individual for all of your information. Stay informed. Always be prepared to defend yourself and your programs if necessary.

Although condemned by many political experts as an evil, lobbying is a necessary and a productive part of the political process. How else will rural state legislators learn of or understand the problems of vocational agriculture teachers?

Every time a lawmaker receives a letter from a constituent supporting or opposing legislation, that legislator is being lobbied. Not only does the legislator need this assistance, in most cases, she or he looks forward to receiving it.

We must be constantly alert to legislative activities that will affect either our present or contemplated projects. Whether it is a retailer who doesn't want a sales tax or a manufacturer who is interested in union-related legislation, there is one thing we have in common. We want to protect our operations as they are today.

Lobbying Expenses

Tax deductions are available for lobbying expenses if you can show that your business has a direct interest in the legislation. Fortunately, the tax rules take a fairly liberal approach in defining just what a so called "direct interest" is.

Many Senators use photos such as this one in their hometown newspapers. Here Area II Vice President Carey Martin is pictured with his Senator, Richard Neeson, and Senate President Sammy Nunez. (Photographs courtesy of Brenda Noland, lobbyist/Louisiana VATA).

For instance, any legislation (actual or proposed) that will have an impact on your trade or business is of direct interest to you and your programs. If you can reasonably expect that at some time in the future, the present legislation will have an impact on your business activities, it will also meet the deductibility test.

A bill is of direct interest to any business organization to which you may belong if the subject matter has a direct interest to the organization itself, or to any one of its members.

The deductible expenses of lobbying are the actual costs of (1) appearing before the legislative body, (2) preparing the testimony or communications, and (3) dues to organizations.

Your travel expenses directly connected to the legislative appearance are also tax deductible. This means that you must, in order to get the deduction, maintain a travel diary just as you do for regular business travel.

You get the benefit of the lobbying deduction when you hire a specialist, incur overtime work, or other expenses that are specifically traceable to your lobbying activities. Thus, the cost of hiring and retaining a professional lobbyist to prepare and present your views is deductible.

You can legally deduct that portion of any dues that you pay to any organization that are attributable to its lobbying activities regarding legislation or proposed legislation that is directly related to the organization or any of its members.

The lobbying expenses deduction rules are complex and narrowly defined. Expressing your views and opinions to our lawmakers is never a waste of time, while those tax rules can make sure that lobbying is not a waste of money, regardless of the outcome.

The Future

The Louisiana Vocational Agricultural Teacher's Association has become a political force to be heard and reckoned with in short of two years.

Endorsements from the Association are being solicited and sought by Gubernatorial and other state and local candidates. In 1988, our organization has been approached by two Presidential candidates. All are recognizing the expense of campaigning in rural communities and the influence and importance of the vocational agriculture teacher in those areas.

We have elected a new Governor and with him will come a new administration for the Department of Education. Our new Governor is aware of the benefits of vocational agriculture and is looking into other state programs in order to reconstruct our department, and others in the Department of Vocational Education.

We are looking forward to our participation with the Governor in making vocational agriculture its own beneficial and productive program.

We have reason to believe the governor will be successful in his efforts, with the vocational agriculture teachers' assistance.

BOOK REVIEW

MICROCOMPUTERS IN SMALL BUSINESS MANAGEMENT explores applications of the microcomputer in performing management tasks and teaching business management concepts and skills. Authors Betty Heath and William C. Camp are professors in marketing and agricultural education respectively, at Virginia Polytechnic Institute and State University.

A multipage matrix lists 11 functional areas of small business operation and selected software packages available to perform tasks within each area for three widely used types of microcomputers — Apple, IBM, and TRS-80. Forty-nine business software packages are reviewed as to their functions as management tools, and 27 instructional software packages are reviewed as to their potential for training business personnel to use microcomputers.

Relevant books, periodicals, and software sources are included in the Appendices, along with evaluation instruments to guide the novice in evaluating and selecting software packages.

You may order MICROCOMPUTERS IN SMALL BUSINESS MANAGEMENT (LT 64-$6.50), 94 pp., 1984 from the National Center for Research in Vocational Education, The Ohio State University, Publications Office, Box N, 1960 Kenny Road, Columbus, OH 43210-1090; 614/486-3655 or toll free in the continental U.S. outside Ohio at 800/848-4815.

ARTICLE

Secondary School — Community College Cooperation

By Randy DeBoer

(Mr. DeBoer is an Agriculture Business/Management Instructor at Western Nebraska Technical College, Sidney, Nebraska 69162.)

The enactment of the 1984 Carl Perkins Act and low student enrollments in Nebraska secondary schools make it difficult to initiate new vocational agriculture programs. In order for secondary schools without vocational agriculture programs to offer students agriculture classes, Western Nebraska Technical College (WNTC) in Sidney has established a program using an itinerant instructor. The objective at WNTC has been to offer secondary students agriculture classes for college credit. Courses include: Farm/Ranch Management (two semesters-8 credits), Crop and Livestock Management (one semester-4 credits), and Agribusiness Careers (one semester-4 credits). WNTC is currently cooperating with three secondary schools in the Nebraska Panhandle.

Our Approach

There are several considerations when establishing a program of this type: needs of secondary schools, staff available at secondary schools, staff available at technical-community colleges, student interest in agriculture classes, financial arrangements, current course offerings in secondary schools, and program curriculum needs.

Needs of secondary schools — There are no secondary vocational agriculture programs in Cheyenne, Garden, and Banner counties and there is only one in Morrill County in the WNTC area. There are a number of vocational agriculture programs in the Nebraska Panhandle. WNTC has no desire to interfere with these programs.

Staff available at secondary schools - There were no staff qualified to teach agriculture-related classes available at the secondary schools without vocational agriculture programs.

Staff available at technical community college - There were no full time staff available at WNTC to meet the on-site needs of the secondary schools when the program began.

Student interest in agriculture classes - Student interest was slow at first but grew as students became familiar with course content and the instructor.

Financial arrangements - Secondary schools pay tuition and fees on a per student basis and pay appropriate travel costs. Books are supplied by WNTC but can be purchased by secondary schools.

Current course offerings by secondary schools - When the program began, there were no agriculture-related classes being taught in the secondary schools in the three county area.

Program curriculum needs - All curriculum is written and administered by WNTC to assure uniformity between schools. WNTC also uses adjunct instructors in two other secondary schools who teach the same curricuum as the WNTC instructor. Credits from the Farm/Ranch management class can be transferred to other post-secondary institutions, thus, uniformity of subject matter is important. The farm management curriculum is also available for sale to any vocational agriculture program.

Other Considerations

Two obstacles that need to be considered are: adjusting to different educational systems and travel. An itinerant instructor will need to adjust his/her teaching style to the needs and philosophy of each secondary school, as well as the community or technical college in which he/she is employed. Travel time needs to be well used because of the distance between schools in the Nebraska Panhandle. Instructor travel time is typically devoted to planning, dictating letters, and reviewing resource material on audio cassette.

Programs of this type offer many opportunities for both secondary schools and technical community colleges, particularly in low population areas. Communication and cooperation by all parties involved are key ingredients for success in this type of program.

NEW PRODUCT

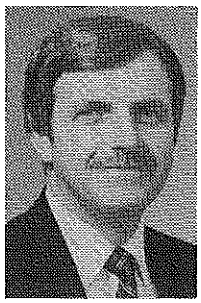
Why do some adults choose not to participate in organized learning? Deterrents to Participation: An Adult Education Dilemma by Craig L. Scanlan reviews recent research that has produced composite models to explain participatory behavior. Scanlan identifies various deterrence factors that can be addressed by providing educational opportunities with low levels of risk or threat, flexible administrative procedures, and effective communication of information. Strategies to meet the needs of reentry women, the elderly, the educationally disadvantaged, and rural adults are also provided.

Deterrents to Participation is one of seven publications produced by the ERIC Clearinghouse on Adult, Career, and Vocational Education located at the National Center for Research in Vocational Education.

Order Deterrents to Participation: An Adult Education Dilemma, 62 pp., 1986 (IN 308 — $7.00), from the National Center for Research in Vocational Eduction, The Ohio State University, Publications Office, Box N, 1960 Kenny Road, Columbus, Ohio 43210-1090; or call toll free 800/848-4815 or 614/486-3655 inside Ohio and outside the continental United States.

ARTICLE

Agricultural Education At Risk



By Donald E. Evans

(Dr. Evans is Assistant Dean of the College of Agriculture and Assistant Director of the Cooperative Extension Service at Pennsylvania State University, University Park, Pennsylvania 16802.)

Agricultural education in America is "At Risk." However, it is not alone in facing the contemporary issues of education. Since the "Nation at Risk" report in 1983, the total educational system has been targeted as an institution that needs attention. Education has been targeted because it offers the greatest potential for positive results to regain international social and economic leadership. Our nation is in a period of major social and economic change; the world is in a massive transformation to a new era.

The ability of American agriculture to regain economic prosperity will depend on how well the educational and research institutions adapt to change and to the challenges and opportunities that are presented by change. We know that agriculture is in the midst of an era of profound change. That profound change is occurring because of complex interactions of international economic adjustments, global competitiveness, evolving technologies, domestic farm policy, agricultural profitability and competitiveness and, most important, the general public's expectations of an efficient and high quality food and fiber system.

Agricultural education has already experienced much change since the 1917 Smith Hughes Act and subsequent acts, including the Perkins Act in 1984. Agricultural education has a history of change, and it has a history of educational successes and a record of outstanding societal service.

Agriculture is America's most creative, productive, and basic industry. Much of this country's success in agriculture can be attributed to a sound program of education. To maintain a stable and efficient agriculture and to assure the continued well-being of our society, high quality agricultural education must continue to be a high priority. A committed, cooperative effort among educational institutions, government agencies and agriculture-related businesses will help America provide leadership for the future through improved agricultural education.

Educational reform is the by-word of the educational arena today. It has been five years since "A Nation At Risk" alerted the nation to a variety of concerns about education. About 30 or 40 major reports on education since 1983 seem to be in agreement that education in America's public schools, colleges and universities falls far short of "excellence in education." All reports make recommendations, and they differ widely. However, they seem to center on quality of teaching and the quality of the teaching environment.

Agricultural education will not be without its special report on educational reform. Thanks to the U.S. Departments of Agriculture and Education, a national study on agricultural education is nearing completion. The national study committee was convened by the Board on Agriculture of the National Academy of Sciences in 1985. This study on agricultural education at the secondary school level was initiated because of serious concerns about the productivity of America's agriculture, declining student enrollments and a focus on existing agricultural education curriculum. The committee was charged to "assess the contributions of instruction in agriculture to the maintenance and improvement of U.S. agricultural productivity and economic competitiveness here and abroad." The committee was asked to offer recommendations regarding the "goals for instruction in agriculture, the subject matter and skills which should be stressed in curriculum for different groups of students, and policy changes needed at local, state, and national levels to facilitate the implementation of new and revised agricultural education programs in secondary schools."

The study on agriculture education will soon be released by the National Academy of Sciences. The timing of the study is late considering we are in the fifth year of a national educational reform movement; however, it is timely as we can see an immediate need to address the risk factor of agricultural education.

Governors and state legislators kicked off 1987 legislative sessions with an aggressive call for educational reform. Increased general funding, more special programs, and big reform packages were in the hoppers. Governors and legislators put family and education issues high on the list of legislative priorities.

Political leaders are increasingly buying the idea that education can often be part of the solution to problems. They are not waiting for the federal government to counter international economic competition, but are jumping into the battle with plans to create new jobs in industry within their own states. In recent years, governors and legislators in a number of states have made education the centerpiece of their economic agendas, and this fact has not gone unnoticed by policy makers in other states. Standing up for

(Continued on page 22)

Agricultural Education At Risk

(Continued from page 21)

education has become a political asset, not an election-year liability.

Contemporary global economic and social issues are not going to be kind to traditional agricultural education. Effective change must happen or programs will need to be eliminated to prevent a poor image and risk of quality programs. In addition, where agricultural education does not exist in a school district or college, the concept of agricultural education needs to be integrated with the existing curricular where appropriate.

Like the agricultural industry, agricultural education is at a crossroads. The educational reform movement in the United States has touched everyone involved in agricultural education. There is a tremendous need to make public policy and local program adjustments in agricultural education. It is clear that the traditional agricultural education programs are at risk. Contemporary agricultural education programs present tremendous opportunities for everyone involved.

To address the future of agricultural education, several recommendations need to be considered.

- Present strengths of vocational agriculture programs need to be retained and the program needs to be broadened to meet the needs of students and the total agricultural industry. Credits for basic graduation requirements should be awarded. In industry, they call this concept retention and expansion.
- Agricultural education curriculum content should be available for all students K-12. Agricultural education across the total curriculum is essential if we are to address the needs of an agriculturally illiterate nation.
- Vocational agriculture teachers need to also become part of the science faculty of local school districts.
- Student access to vocational agriculture needs to be improved where programs exist and new programs need to be developed when the vocational agriculture curriculum includes the content of contemporary agricultural education.
- The scope of adult agricultural education needs to be broadened to include education about the total spectrum of the agricultural food and fiber systems: production, processing, marketing, and consumer agriculture.
- The need exists to bridge the gap between public or private research and education by using modern electronic information transfer systems and new professional development methods.
- A well defined partnership needs to be developed in all states that closely links agricultural education in the public school with agricultural education in the Cooperative Extension Service.
- A well designed marketing strategy needs to be developed to inform the public about agricultural education. A new image of agricultural education needs to be developed.
- Teacher education programs need to expand their offering to provide courses for school administrator certification programs and other elementary and secondary teacher certification programs.
- Teacher education programs need to provide more public policy development and community affairs education.
- Inservice education and workship offerings need to be broadened to include school directors, administrators, other elementary or secondary teachers, state staff as well as agricultural education industrial training for corporate boards, CEO's and employees.
- Partnerships need to be developed at the local and state levels with public and private agencies to foster collaborative educational efforts.

"Agricultural Education — a program at risk" can be changed to "Agricultural Education — a nation's greatest opportunity." There are no quick fixes to this transformation. It will not be without conflict as tradition is exchanged for contemporary pursuits. A pioneering spirit must be the driving force to seek opportunities in agricultural education.

The high school graduating class of the year 2000 entered kingergartens in September, 1987; the class of 2004 at teacher education institutions. We must not wait until 1996 or the year 2000 to give them an opportunity to receive agricultural education. The future of a global and universal agricultural industry depends on the vision and wisdom of each of us. The choice to change and to seek new opportunities is ours. This choice should not be taken lightly because the future will be shaped by our decision.

ARTICLE

A Conceptual Approach for Selecting Instructional Materials

What types and kinds of instructional materials have you used this year? Upon what basis did you select the ones you used? Did the materials you select promote effective learning for your students?

The selection of instructional materials must be based on sound theories and/or principles of learning. Much has been

By Larry D. Powers

(Dr. Powers is Assistant Professor of Agricultural Education at North Carolina Agricultural and Technical State University, Greensboro, NC.)

written on how people learn. The selection of instructional material must be congruent with the desired or expected outcomes. Gagne (1975) proposed five major categories of learning outcomes: (1) verbal information, (2) intellectual skills, (3) cognitive strategies, (4) attitudes, and (5) motor skills. These outcomes are routinely expressed in the teacher's behavioral objectives. Selection of materials for instruction is based upon the assumption that the outcomes have been predetermined.

When exposed to novel learning experiences, individuals associate and relate the new experiences with previous ones. Ausubel (1975) refers to this as scaffolding; an internal process whereby individuals anchor new materials to what is already known. Ausubel maintains that individuals subsume information and re-arrange it according to their internal cognitive structure. Not only do individuals have a cognitive structure, but each discipline also has a cognitive structure (cognitive structure refers to the hierarchical arrangement of information/concepts).

The implications for effective teaching is that the teacher must be familiar with the abilities/experiences of his/her students such that relevant and appropriate materials may be selected. This also implies that the teacher must be knowledgable of the subject under consideration.

Bruner (1977), like Ausubel, proposes teaching concepts for effective teaching. Bruner indicates that as new information is learned, the internal structure of the individual attempts to relate it to something already known. Unless new information is used, the learner tends to forget it as time progresses. The propensity for the learner to retain the concept is greater relative to retaining bits and pieces of information that support the concepts.

Theories/concepts such as the ones mentioned here give insight on how people learn and serve as a guide for selecting appropriate instructional material.

Evaluation and Selection of Instructional Materials

Evaluating and selecting instructional material is a very important role of the vocational agriculture teacher. Appropriate selection and utilization of materials facilitate learning. The only justification for the presence of the teacher is that he or she helps facilitate learning (Bender, et al. 1972). The selection of materials is a continuous and ongoing process throughout the school year. The teacher is constantly making decisions relative to materials and their utilization. These decisions should be based on acceptable criteria. Phipps (1980) proposes the following guidelines for evaluating and selecting materials:

1. The year copyrighted.
2. Its adaptability to the supervised occupational experience programs and needs of the community.
3. The clearness, coverage, and organization of the material.
4. The number and quality of the illustrations.
5. Its authoritative value.
6. The amount of usable material.
7. Its apparent bias, prejudice, attitude, and philosophy.
8. Its cost.
9. The ability level for which it was written (p. 459).

Lee (1975) indicates that the instructional materials utilized reflect the curriculum. According to Lee, such materials "shape" the curriculum, giving it form and substance.

Given that the teacher understands the rationale and criteria for material selection, identification of sources of appropriate material becomes very important.

Sources of Instructional Materials

Generally instructional materials are readily available if the teacher knows how to go about securing them. Phipps (1980) identified five sources of instructional materials for vocational agriculture teachers:

1. Agriculture colleges and experiment stations in the state.
2. Other states.
3. U.S. Department of Agriculture and various bureaus.
4. Agribusiness associations.
5. Various commercial concerns (p. 460).

Materials from these agencies are usually available for a nominal fee or free. These agencies are constantly updating and developing materials that are valuable for vocational agriculture instruction. In many instances, these agencies will have a list of all available materials. Titles of materials may be misleading, so if ordering by mail it is recommended that **only** one be ordered for reviewing before large quantities are obtained. The teacher can obtain information by writing the agency or by visiting the nearest office.

Materials frequently used by students should be obtained such that individual materials are available for the largest class utilizing them. One or two copies of materials infrequently used may be adequate.

Summary

Teachers constantly make decisions on which materials to use for teaching. It is clear that this role of the teacher is a basic and continuous one. It is also clear that the decisions teachers make concerning instructional materials have an impact upon the learning of students. If teachers are to provide the best learning experiences for their students, then appropriate instructional material must be secured. It seems apparent that teachers who understand the rationale for materials selection and procedures for securing them will increase the probability of students learning the objectives intended.

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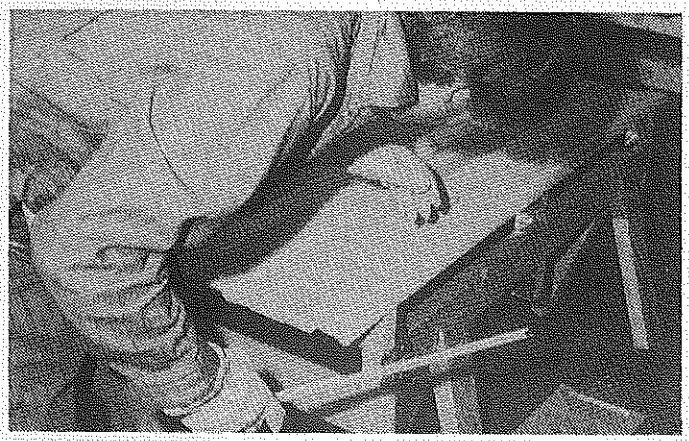
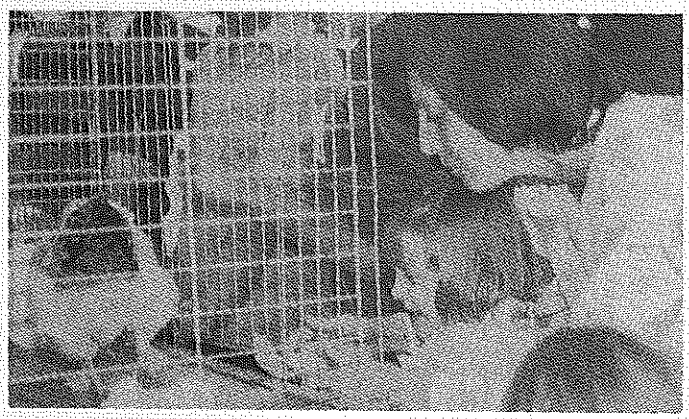
Stories in Pictures

Articulation Questions for Agricultural Educators

COLLEGES AND UNIVERSITIES
Should instructional programs in colleges and universities be articulated with secondary and post-secondary instruction in agriculture? (Photo courtesy of David Hall, Pennsylvania State University.)



SECONDARY AND POST-SECONDARY
What approaches are available to facilitate articulation between secondary and post-secondary programs that specialize in areas such as agricultural mechanics? (Photo courtesy of Glen Miller, University of Arizoan.)



ELEMENTARY SCHOOL INSTRUCTION
What models are most effective in teaching elementary level students about agriculture? (Photo courtesy of Chris Townsend, Texas A&M University.)

YOUNG FARMER EDUCATION
What role should young farmer instruction such as that being conducted by Gary Olsen in Montana have in today's system of vocational-technical education in agriculture? (Photo courtesy of Max Amberson, Montana State University.)