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**Innovative Curriculum Ideas and
Practices in Agricultural Education**

Questions About the Curriculum: A Baker's Dozen

By Robert A. Martin, Editor

The curriculum in agricultural education has long been an area that generates considerable discussion and a lot of anxiety. This is especially true for the beginning teacher who consistently asks what should be taught, how much of it should be taught, why should I teach that subject or topic and when should I teach it? These are legitimate questions that are neither easy to answer nor are the answers generally accepted by everyone in every situation. Although many states have what is often referred to as a basic core curriculum, many teachers still have questions concerning a focus on minimum and maximum competencies and skills and knowledge development appropriate for their students.

Most agriculture teachers would admit that the curriculum presents a major challenge regardless of the situation. In their attempts to have up-to-date programs, teachers often add new areas or topics to the curriculum because of their "newness" regardless of the "fit" they may have to the existing curriculum. While adding new areas to the curriculum is a great idea, to do so without regard to the bigger picture and the whole curriculum package seems to undercut the purpose of a curriculum as a guide or road map to learning.

There are a number of questions that could serve as a guide to teachers as they seek to be innovative and deliver the curriculum that reflects the essential elements of the agriculture industry

from which the curriculum is derived and to which student interest can be attracted. These questions are not magical nor are they necessarily all the questions that merit attention when considering curriculum development. However, these questions do provide a guide for all teachers who take seriously their responsibilities for curriculum reform and innovation.

Does the curriculum represent a broader view of agriculture (e.g. food, fiber & natural resources)?

Does the curriculum reflect the current best practices in the industry?

Does the curriculum have relevance to the students, the community, and other clients?

Does the local advisory committee provide perspective on curriculum content and related delivery mechanisms, community resources, assistance?

Is the curriculum delivered in some kind of sequential and logical pattern?

Is the curriculum delivered using appropriate delivery mechanisms, strategies, tools and communication technologies?

Are specific skills, competencies and knowledge bases being learned and documented?

Is it clearly observable that an "educational package" focused on learning is being delivered?

Does the delivery of the curriculum actively engage students in a learning process with clearly stated outcomes?

Does the curriculum guide the selection, development and delivery of the supervised agriculture

experience program (SAE)?

Does the curriculum have an impact on learning and does it make a difference?

Does the curriculum link to and enhance FFA activities, personal skills and leadership development?

Is the curriculum subjected to periodic review and evaluation?

The agricultural education curriculum cannot exist in a vacuum, nor does it appear out of nowhere. The curriculum must be based on careful thought and analysis. The curriculum is an enormous responsibility for a teacher. State and community leaders as well as fellow teachers stand ready to assist you in the curriculum review and reform process. Perhaps the "Bakers Dozen" list of questions will be useful to those teachers seeking to review and reform their curricula.

Special thanks and appreciation go to all authors who submitted articles for this issue of **The Magazine**. There are many useful and innovative ideas in this issue. Dr. Brenda Seevers is to be congratulated for generating lots of interest in this issue and for serving as the Theme Editor. Thanks!!!!

Please read and use the ideas and practices in this issue.



Robert A. Martin is Editor of *The Agricultural Education Magazine*. He serves as Professor and Department Head of Agricultural Education and Studies at Iowa State University.

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Innovation comes in many forms, as this issue shows. Effective educators must be innovative in their teaching methods, as well as understanding the latest technological innovations. (Photo courtesy of Iowa State University, College of Agriculture.)

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What's New in Agricultural Education?

By Brenda Seevers

The theme for this issue is "Innovative Curriculum Ideas and Practices in Agricultural Education." But, what is innovation? Rogers (1983, p. 11) defines innovation "as an idea, practice, or object that is perceived as new by an individual or other unit of adoption."

There are few among us that are not looking for something new, different, exciting and/or challenging that will assist in motivating and stimulating students, improve teaching and strengthening our overall programs.

I recently had the opportunity to attend a regional teaching symposium for faculty in Colleges of Agriculture and Home Economics. Many excellent workshops and seminars

were presented. It was interesting to note that while several of the programs presented were on topics that we as teacher educators practice and promote on a daily basis, for many of the participants the information was new and innovative. For others, some the ideas came in the form of a new twist or variation of an existing idea.

The key to innovation is that it is perceived to be new by a given individual. The ideas shared in this issue may not be new to some at all, while others will adopt one or several of the ideas offered. Ideas in this issue range in scope from technology and media to curriculum ideas to ideas for planning and organizing teaching. I'm confident with the wonderful "innovations" shared in this issue, there is something of value for everyone. What a wonderful

time to be in agricultural education!

References

Rogers, E. M. (1983). *Diffusion of Innovations*. The Free Press, New York. (Third Edition)



Brenda Seevers served as the Theme Editor for the January-February issue of *The Agricultural Education Magazine*. Seevers is an Associate Professor in Agricultural Education at New Mexico State University.



Agriculture teachers practice "hands-on" activities for use in their classes. These teachers are developing peanut butter prototypes for taste and quality testing during the 2001 Missouri Food Science Institute. (Photo courtesy of Weston Walker, Gordon Laboube, and Bob Birkenholz.)

Developing Success Through Innovation

By Robin L. Peiter

"The only thing that remains constant is change."

Agricultural Education is no exception! Through its extensive history, the curriculum has changed to meet the needs of the agriculture industry and interests of students. Innovation was the causing factor in creating this change. What is innovation? Innovation is something perceived as new. It is an individual discovery of a device, idea or method.

Innovation is no stranger to agriculture. We've witnessed vast amounts of technological and social change in agriculture through works of innovators. Examples include developments of machines such as the cotton gin and steel plow. Ideas such as global positioning or genetically modified organisms are present today in agriculture.

Agricultural education has also grown through innovation. Our founding fathers, Rufus Stimson, Charles Prosser and Seaman Knapp were innovators! They made a new discovery—establishing a school-based program to educate farm boys who were returning to the farm. Just as innovations begin, program changes were and must continue to be made if we are to keep up with the diverse needs of the students. In 2002, agricultural education programs reach 652,503 students in all 50 states, Puerto Rico, and the Virgin Islands. Programs today must be more diverse in order to reach the changing interests of students and needs of the community. Different backgrounds, race, gender, economic status individual interests, and community needs are a few aspects that affect the development of the

curriculum in agricultural education.

Agriculture education teachers need to be effective leaders in developing innovative programs. With their leadership, students will be challenged within the three major components of the program: classroom instruction, supervised agriculture experience programs (SAE), and leadership through the FFA.

Providing innovative opportunities for learning is vital for agricultural education programs to become successful. In New Raymer, Colorado students gain hands-on instruction emphasizing animal science. Full artificial insemination laboratories allow students to learn about reproduction. This in-depth instruction prepares students for careers in animal science.

Agriculture communication students in Comanche, Oklahoma are involved in producing a television show focusing on local FFA chapters leadership activities. Students gain experience interviewing, writing stories, and editing film. This real-life experience teaches students the aspects of television production. It also can lead to career exploration and development.

The students' supervised agricultural experience program is a major area of the total agricultural education program. Leadership from agricultural education teachers is extremely important, as students become aware of the vast possibilities. Finding a program that applies concepts learned in their agricultural class while challenging students to continue learning is the key. New ideas regarding student SAE's include aquaculture. More traditional projects can be innovative also, if conducted in a unique way.

Since its establishment in 1928, the National Future Farmers of

America has changed to meet the needs of a diverse audience. A great example of this is the name. Today, members belong to the National FFA Organization, reflecting all aspects of today's agricultural industry. The addition of new career development events and proficiency award areas are just an example of innovative leadership at the national level. FFA members at the local level are also innovators with the development of their chapters' program of activities.

One example of innovation at the local level is taking place in Oklahoma. Durant FFA members along with other Bryan County FFA chapters collected items for the American Red Cross following the September 11th tragedy. Non-perishables such as medical items, food supplies and clothing were distributed to those in need.

Now, more importantly in 2002, we must continue to be innovative in the Agricultural Education profession! Innovation is dependent on each agricultural educator. Creativity is a must for developing a new idea, devising changing curricula and course methods, and planning students' SAE programs, or the FFA chapter's program of activities. However big or small the innovation, successful programs of agricultural education will develop successful students!

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Welcome to the Wonderful World of Agriculture

By T. Grady Roberts

Since the publication of *Understanding Agriculture: New Directions for Education* in 1988, there has been a push for more agricultural literacy education at all levels of instruction. In 2000, this same need was again identified by *A New Era in Agriculture: Reinventing Agricultural Education for the year 2020*. Over a decade has passed and the need for agricultural literacy is still here. So what can we, as agricultural educators, do to help with this need? First, we need a direction for agricultural literacy. It is obvious that most people will never be involved in producing food and fiber.

However, our citizens make decisions daily as consumers that can have a great effect on the agricultural industry. They also have a direct impact when they step into a voting booth. Therefore, our agricultural literacy efforts should focus on educating future consumers on where food comes from, how to select food and fiber products, and the importance of a strong agricultural industry. Programs such as *Agriculture in the Classroom* have done a commendable job, but more is obviously needed.

One solution to this need is an innovative curriculum taught to sixth grade students in a Florida middle school. These students are rotated through eight subjects, spending eleven days in each. One of these subjects is agriculture, where this curriculum is taught. During an eighteen-week semester, over 600 sixth grade students in the school are taught this curriculum. These eleven days could be easily spent trying to recruit future agriculture students.

However, there is a golden

opportunity to develop agricultural literacy, as most of these students would otherwise never receive any formal instruction about agriculture and will never be in another agriculture class. No other person is better suited for developing agricultural literacy than an agricultural teacher. For eleven days, we tour the "Wonderful World of Agriculture". Our itinerary is as follows:

Day 1: Class Orientation & Overview of the Agriculture Industry

Students are oriented to classroom procedures, requirements, and policies. A pre-test is given to determine prior knowledge. The content focuses on the importance of agriculture to our county, state, and then to the country. Current facts and figures are used to emphasize the economic impact that agriculture has.

Day 2: Horticulture Industry & Plant Propagation Lab

Landscaping and lawn maintenance are included because homeowners need basic knowledge in these areas. The fact that there are plenty of urban career opportunities in horticulture is also emphasized. In the plant propagation lab, students propagate a plant by using softwood cuttings, which they will later take home.

Day 3: Self Improvement & Goal Setting Activity

Thinking about making yourself better is not specific to agriculture, but it is included to help make better citizens out of these students. The goal setting activity starts with self-assessment and then concludes with setting specific goals to address their future plans.

Day 4: Large Animal Industry & Butter Lab

The importance of large animals, the role of ruminants, and the animal rights/animal welfare issue are discussed. In the lab, students make butter from cream and then have the opportunity to taste it.

Day 5: Leadership Development & FFA Activity

A brief history of the leaders that have ties to American agriculture is covered including many of our founding fathers. In the FFA activity, students learn some basic knowledge about FFA and produce a FFA emblem to take home.

Day 6: Aquaculture Industry & Aquaculture Lab

Aquaculture is included to show some of the non-traditional aspects of agriculture. Information on ornamental fish and food fish is covered. The lab is conducted at the aquaculture lab, where catfish are caught, measured and released.

Day 7: Citrus and Vegetable Industry & Orange Juice Lab

Topics covered include harvesting, transporting, and marketing. Pesticide usage is also discussed. In the lab, students are able to select their oranges and process them into orange juice.

Day 8: Meats Industry & Animal Products Activity

Selecting and cooking meat is addressed. In the animal products activity, students are broken into five groups based on the livestock species of cattle, swine, horses, sheep, and poultry. Each group is instructed to come up with as many products as they can that come from their species and report them to the class.

Day 9: Agronomy Industry & Pop Corn Lab

The importance of corn, soybeans, and other agronomic crops is discussed. The students generate a list of as many products as they can that come from corn. In the lab, students make popcorn using several different cooking methods and then compare the taste differences.

Day 10: Careers & Agriculture Careers Activity

Students are instructed on the importance of starting to think about what career they may want. In the careers activity, students are broken into groups that come up with a list of agriculture careers. Their list is reported to the class, where an overall list is made. How to prepare for each of the careers is discussed.

Day 11: Review/Wrap Up & Defining Agriculture Activity

The previous ten days are summarized. Students are given a post-test to assess knowledge gained.

As a class, a definition of agriculture is developed. Students will collect all of their materials to take them home.

Obviously, these topics could be altered to fit the needs of any state. The key is to provide information about agriculture in an interesting context. A less formal approach of instruction is taken during the lab activities to encourage questions from the students and instigate class discussions on topics related to the industry of the day.

Each lesson concludes with a short handout that reinforces the material covered on the industry of the day. This curriculum easily serves its purpose to increase agricultural literacy as measured by a post-test and by student attitudes towards agriculture. The feedback from students is positive. In fact, they usually don't want to leave after eleven days. A positive side effect of this curriculum is increased enrollments in the seventh and eighth grade agriculture classes.

Lack of agricultural literacy is a problem likely to continue well into the future. As agricultural educators, we do an excellent job of developing agricultural literacy in our classes. This is like preaching to the choir since the largest part of the student population will never sit in an agriculture classroom. Rather than hiding behind the notion that "we are doing our part," we need to seek out opportunities to help develop agricultural literacy in the next generation of citizens. No one is better suited for this challenge than those knowledgeable about agriculture. Be a tour guide!



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After 34 hours of intensive classroom and laboratory instruction, these instructors were able to road-test their gooseneck-type trailer. However, they started with only a blueprint and raw materials at the 2001 Missouri Summer Agricultural Mechanics Institute. (Photo courtesy of Weston Walker, Gordon Laboube, and Bob Birkenholz.)

Teaching SAE in an Experiential Way

By Sue E. Hoop and Neil A. Knobloch

The problem of making Supervised Agricultural Experience (SAE) relevant to students in agriculture continues to exist. Throughout my year as a state FFA officer in 1997-98, I traveled to different schools throughout Ohio giving workshops about the opportunities in the Agricultural Education program. One vivid memory that I have was related to students who did not know and understand the value of SAE programs. Many students commented that they did not have an SAE project because they "don't live on a farm."

This disturbed me, but I never really came up with a good solution. Recently, my student teaching experience took me back to the problem that many students faced when I was a state FFA officer. My university supervisor challenged me to create an activity to teach SAE using constructivism to meet the diverse needs of my students. Creatively, I finally had an answer to their problem. Teaching SAE in an experiential way may be the key to success for today's agriculture students who come from different backgrounds.

How can SAE be made relevant for students with many different backgrounds in today's agricultural education programs? Frequently, many agricultural educators hear their students ask, "What can I do as an SAE?" The concept of SAE—students experiencing agriculture with adult supervision—has proven to provide students with the ability to apply knowledge, solve problems, identify career choices, develop responsibility, and learn agricultural skills through practical experience (Knobloch, 1999). Are we going to deny the many different students in

agriculture the opportunity to learn all of these qualities because we cannot find an SAE program for them? This article, shows how to tackle this problem.

It is important to review the principles of SAE. Using the components of SAE (Barrick et al., 1992; Knobloch, 1999), projects: (1) are conducted outside-of-the-classroom; (2) are supervised by an adult; (3) are based on an educational plan; (4) develop skills transferable to agriculture; (5) explore and develop career interests; (6) require students to invest time and/or money; and, (7) provide educational and/or financial returns on their investments of time and/or money.

I had trouble designing lesson plans to teach SAE to over half of the students in the Agriculture I class who did not have any agricultural production experience. I discovered that SAE is a student-centered project usually taught in a teacher-centered format. This teaching approach tends to decrease motivation and cause frustration between the teacher and students. Through a discussion with my university supervisor, we determined that I should teach SAE in a student-centered way that would create interest and relevancy for traditional and non-traditional students.

With a little creativity and hard work, I designed a class project that guided 38 students in their first agriculture course through an actual SAE program. The class project was designed around the six components of the experiential learning cycle (Knobloch, 1999; Martin, 1991): (1) Clear Expectations; (2) Relevancy; (3) Structure; (4) Evaluation; (5) Communication; and, (6) Documentation.

The next section describes how

an introductory unit of SAE was taught, through an experiential learning experience that was relevant to all learners.

Clear Expectations – Students were provided information about the SAE program from the FFA Student Handbook. After the students struggled with creating ideas of different examples of SAEs, the class was informed that they were going to develop an SAE project to teach elementary students about agriculture that would demonstrate the components of an SAE project. The students were challenged to think of topics and activities that they could do as a part of the class project.

Relevancy – Students were organized into cooperative learning groups to develop their own ideas of what they could teach elementary students about agriculture. Students worked in these groups to develop lesson plans to conduct their teaching activities on the topics that they selected based on the approval of the student teacher. The actual experience of participating in an SAE project helped all students make connections with the purpose and benefits of doing SAE programs.

Structure – The students started the project on November 1st, and at that time the students were told that they would be teaching the elementary students on November 20th. The groups had time during the first week to work on these projects in class so that they could do research on their topics. Students and teacher worked together developed ideas for activities and interest approaches. After the first week, the students worked on their projects outside of class to practice and finish up their research. The students were also responsible

for keeping their record books up-to-date. A day before the students actually went to the elementary school, the students were evaluated as they taught in front of their peers.

Evaluation – First, the initial lesson plan was evaluated and the groups were given ideas for improvement. Second, the groups performed their lesson for the student teacher using all of the items (e.g., posters, food) that they were going to use with the elementary students. Third, the students were evaluated on their teaching in front of their peers during class. Fourth, the record books were completed by each student and evaluated by the student teacher.

Communication – The students used both written and verbal communication skills when doing this project. They were required on several occasions to speak in front of the student teacher, their peers, and the 10 classes of elementary students and teachers. The students developed their written communication skills by completing lesson plans and their record books.

Documentation – Students documented their effort, progress, and growth by completing a record book. The record book consisted of an enterprise agreement, goals and accomplishments, plan of practices (lesson plans), competencies to-be-gained, hours worked, expenses for activities, beginning inventory of knowledge (before project), and ending inventory of knowledge (after project). Pictures were taken, of the teaching activities, for the students to include in their record books. A local television station filmed the class project at the elementary school and provided the students with a videotape for them to see the actual results.

The students were very creative with their lesson plans. Topics included: planting and caring for a

flowering plant, comparing the differences of feed ingredients to snack foods, and identifying the kinds and uses of corn. The students were asked to reflect on their first SAE project by identifying three adjectives to describe the SAE class project. Students described their first SAE project as "fun, interesting, educational, original, exciting, challenging, successful, creative, patience, energetic, extravagant, delightful, surprising, and different."

A few student comments include:

- "It was cool and you still learned something. That is rare these days." (Male student, non-traditional program).
- "It was great! Now I actually know what an SAE is." (Male student, traditional program).
- "It has given me the basic steps, which will help me in my real SAE. It has givenme ideas for my project." (Female student, non-traditional program).
- "This project has opened new doors for me and I now understand how important it is to keep good records and stay orderly." (Male student, traditional program).
- "I have a better understanding of record keeping and this gave me a bigger view of what my SAE project could be." (Female student, traditional program).
- "I think that SAE projects will help you learn more that you could use in life." (Male student non-traditional program).
- "This SAE project help[ed] me understand." (Male IEP student, traditional program).
- "Well, it has taught me that I should take teaching into consideration. It has also taught me that public speaking is not a good quality of mine!" (Female student, non-traditional program).

Supervised agricultural experiences are an essential component to an agricultural education program and the foundation to experiential learning. We witnessed students get excited about their own SAE programs when they experience their first SAE project as a student-centered class activity. We believe that when students are introduced to the concept of SAE by experiencing it, agricultural educators will be frequently asked, "When can I get my record book," rather than, "Why do I have to do this?"

References

Barrick, R. K., Arrington, L., Heffernan, T., Hughes, J. M., Moody, L., Ogline, P., & Whaley, D. (1992). *Experiencing agriculture: A handbook on supervised agricultural experience*. Alexandria, VA: National Council for Agricultural Education.

Knobloch, N. A. (1999). The new SAE: Applied. *Agricultural Education Magazine*, 72(3), 16-18

Martin, R. A. (1991). Reinventing experience programs in agriculture. *The Agricultural Education Magazine*, 64(6), 20 & 22.

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Getting It All Under One Roof: A 'One-Stop-Shop' Curriculum Resource

By Frank B. Flanders, Matthew J. Flanders, and M. Craig Edwards

“Technology is changing and reshaping the world of public school education” (Fu & Ouyang, 1996, p. 3645), including agricultural education. Murphy and Terry (1998) concluded that computer-based technologies—electronic communication, information, and imaging technologies—will improve how agricultural educators teach.

Further, Johnson, Ferguson, Vokins, and Lester (2000) argued that “students [e.g., preservice agriculture teachers] must first learn these skills and then tasks requiring use of the skills must be incorporated” (p. 36) into their formal preparation. Moreover, future *as well as* practicing agriculture teachers should receive training that includes direct access to, and experience with, innovative instructional technologies and related resources such as CD-ROMs.

To this end, institutions and agencies that are charged with preparing and inservicing teachers should develop resources that support opportunities for acquiring and using computer-based teaching and learning innovations. Accordingly, the Georgia State Department of Education, Agricultural Education Division, has developed the *Georgia Curriculum Resource and Reference CD* set for Agricultural Education. The CDs are a comprehensive resource that are made available annually to Georgia Agricultural Education inservice and preservice teachers.

The CD project was funded initially with state and federal monies, however, now it is supported primarily

by Carl D. Perkins funds. The project began with a temporary eight-month person and one-half time of a state staff person; approximately, 100 agriculture teachers were involved in revising and writing the original curriculum materials. An estimated \$85,000, including personnel costs, was used to produce and distribute *Version 1*.

How the CD Set Works

The *Georgia Curriculum Resource and Reference CD* set contains 30,000 pages of curriculum materials including complementary and supplementary materials that support a comprehensive agricultural education program. The two CD set includes more than 1300 lesson plans in MS Word for the 41 agricultural education courses taught in Georgia. Course-related quiz games (PowerPoint), crossword puzzles (CrossWord Wizard), identification slides (PowerPoint) and a variety of supplemental documents that support teaching agriculture are also included.

In regard to other components of the comprehensive agricultural education model, Staller (2001) stated that agriculture teachers must strive to develop and implement “integrated” programs that include diverse Supervised Agricultural Experiences (SAEs) as well as robust opportunities for students to participate in the FFA. Therefore, the CD set incorporates instructional and program support resources such as SAE descriptions, photos, and clipart, National FFA Awards Bulletins, Career Development Event examinations (MS Word and online versions in ExamView), program reporting and ordering forms, and Freeware and Shareware programs.

The CDs are self-booting and operate similar to a Web site. Internet Explorer and Netscape are the preferred browsers. The disks are interchangeable so teachers may access either one as needed.

Resources Needed

The curriculum CD project is ongoing with major updates made each year under the direction of a state staff member. An average of \$25,000 for student and clerical support is expended, and an estimated 400 hours of *gratis* development time from Georgia agricultural education teachers and state staff members goes toward this effort. The CDs rely on the latest technology but contain modifications that make them accessible on older computers as well; Windows compatible machines work best but Macintosh computers can be used.

It is a Work in Progress

Since initial development of the electronic resource in 1998, the CD set has been revised, updated, and improved continuously. The most current release was *Version 5*, which was distributed to Georgia agriculture teachers during their annual conference summer 2001. CD sets are also made available each year to University of Georgia and Fort Valley State University preservice agricultural education teachers. To date, approximately 3000 CDs have been distributed free of charge to inservice and preservice teachers, career and technology directors, curriculum coordinators, and other school personnel in Georgia.

Linda Schrenko, State Superintendent of Schools, Georgia Department of Education, said the following

about the *Georgia Curriculum Resource and Reference CD*:

“The continued development and improvements made to the Curriculum CD demonstrates the continued commitment of the agricultural education profession to continuously diversify the curriculum, increase the academic rigor of agriculture courses and provide resources to the agriculture teachers paralleled by no other profession....Agricultural educators in Georgia continue to have access to a curriculum resource that is functional and challenging to assist them in accomplishing the QCC [Quality Core Curriculum] objectives for agricultural education.” (Georgia Department of Education, 2001)

Advice to Others

The preferred curriculum delivery method for agricultural education in Georgia is through the two CD set which is supplemented by a web site. (The Georgia Ag Ed web site can be found at www.gaaged.org.) Although Web delivery may be a less expensive alternative, currently, there are three reasons for continuing curriculum delivery on CD-ROMs and supplementing it with a Web-based resource: (1) at this time, all Georgia agriculture teachers do not have Web access; (2) client service via the Web is not always as reliable or accessible as it is for the CD set; and (3) CD duplication is inexpensive when compared to the cost of web site development.

Future Plans

Rieber (as cited in Fu & Ouyang, 1996) concluded that, “pictures are superior to words for memory tasks” (p. 3646), and that if visual representations support instructional objective(s), then student learning will be facilitated. The current CD set contains 234 PowerPoint presentations that support the resource’s

various lesson plans. Moreover, the presentations are continuously modified and upgraded and new ones are under development that will be incorporated into *Version 6*, which is scheduled for release in summer 2002. In addition, new and improved interest approaches for lessons, such as games and other student-centered learning activities, which can be modified by teachers or students, will be included on future versions of the CD set.

Conclusion

Curriculum and related instructional resources that are provided on CDs are cost-effective and convenient. Delivery on CD-ROM, supplemented with a parallel web site, has proven to be a highly effective means of disseminating updated and improved agricultural education curriculum to agriculture teachers and other program stakeholders in Georgia. Essentially, teachers have access to an “electronic library” of lesson plans, which they can then use, enhance, extend, adapt to local conditions, and build on, as well as a variety of additional instructional resources that support integration and delivery of the primary components of a comprehensive agricultural education program.

References

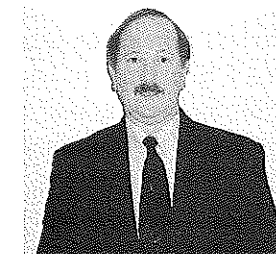
Fu, P., & Ouyang, J. R. (1996). Effective graphic design for teaching in distance education. In Bernard Robin, Jerry D. Price, Jerry Willis, & Dee A. Willis (Eds.), *Technology and Teacher Education Annual, 1996* (pp. 3645-3648). Charlottesville, VA: AACE.

Georgia Department of Education. (2001). *Georgia Curriculum Resource and Reference CD, Version 5*. Author.

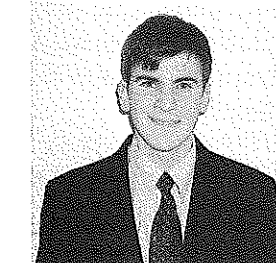
Johnson, D.M., Ferguson, J.A., Vokins, N.W., & Lester, M.L. (2000). Student computer use in selected undergraduate agriculture courses: An examination of required tasks. *Journal of Agricultural Education, 41*(4), 27-38.

Murphy, T., & Terry, H.R. (1998). Opportunities and obstacles for distance education in agricultural education. *Journal of Agricultural Education, 39*(1), 28-36.

Staller, B. (2001, February/March). What in the world does *integral* mean anyway? Is FFA optional? *News & Views, 43*(3), The National Association of Agricultural Educators, Inc.



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A Planning Structure for Active Learning

By Robert M. Torres

Throughout the history of agricultural education, our teaching philosophy has been consistent. Students learn best by doing. We subscribe to hands-on learning and other active learning approaches as a means to involve students in the learning process. Hands-on learning is the hallmark to career and technology education, and agricultural education provides more of these opportunities than anyone else.

In light of this time-proven philosophy that students learn by doing, we in teacher education have strived to teach aspiring agriculture education teachers (preservice teachers) the basis for active learning. Toward this end, we communicate why we embrace the active learning philosophy, when we should use active learning, and how to plan for active learning.

Embracing Active Learning

There exists theory and a plethora of research to support the basis for active learning. Active learning engages students' interest in the learning process. It provides students with opportunities to actively restate or apply key concepts and skills. The more frequent the opportunities for learners to apply new concepts and skills in different situations, the better they will be able to remember and use them. While there are a myriad of means to promote active learning, in agricultural education it is best promoted by allowing students to participate in hands-on learning experiences.

When to Use Active Learning

According to Davis (1993), active learning includes doing, discussing,

writing, or taking action. When students are provided opportunities to test out what they have learned and how well they have learned it, they are more likely to experience success and elevate their motivation to learn.

Because of its flexibility and basic structure, we, at New Mexico State University, promote the use of the four-step approach to teaching. The four steps include preparation, presentation, application, and evaluation. The preparation step focuses the learner's attention on the subject matter to be learned and creates a felt need-to-know in learners. The presentation step provides instruction in a manner that learners learn best. The application step allows learners to put into action the knowledge or skills learned in the presentation step. And, of course, during the evaluation step, learners' knowledge and skills are appraised.

We believe these steps to be the four pillars of lesson delivery. The approach allows for flexibility in teaching style and can incorporate a variety of teaching methods and techniques, while providing a basic structure to teach lessons. While active learning can occur in any of the four steps to teaching, the most suitable is in the application step.

Planning for Active Learning

The application step requires effective planning, as do the other three steps (preparation, presentation, and evaluation). Learning is most effective when there is immediate practice of what is taught. Therefore, no lesson is complete without allowing learners to apply knowledge and skills.

While there is a variety of lesson plan structures and approaches, we have found success in developing and using a simple structure for planning

the application step. Preservice teachers are provided with an electronic template for structuring an application step. Other electronic templates are used for the remaining lesson-delivery steps, but the application step is the focus here. The application template is flexible, yet presents preservice teachers with basic the information structure required to provide learners with a successful, active learning experience.

As with other lesson plan formats, the template includes basic headings to guide preservice teachers as they plan for active learning during the application step. Cover page headings (Figure 1) include lesson title, application title (if different from the lesson title), estimated time to complete the activity, learner performance objective(s) addressed by the application/activity, and materials and supplies required to successfully complete the application/activity. Also, there is a section for preservice teachers to make a clear connection between what they have learned in the presentation step and the activity, which includes stated teacher directions. Lastly, the cover page includes post-application/activity discussion questions. At the conclusion of the application/activity, questions designed to recap the content and encourage learners to think reflectively about the content are posed and discussed to bring closure to the activity.

The second page is the "nut and bolts" page, where preservice teachers outline the procedure for implementing the application/activity designed to provide learners with active learning. The procedure is outlined numerically step-by-step with a column on the right to provide

the key points associated with each procedural step when executing and completing the application/activity. This page can serve to guide the preservice teacher's activity plans, or it may be shared with learners when

in supervised study situations. This application template format is flexible enough to use when planning biotechnology learning activities or traditional laboratory-related activities. The template provides the structure, while

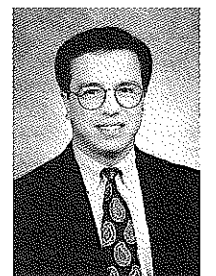
preservice teachers provide the content and the creativity in creating active learning experiences for learners.

Summary

Providing preservice teachers with a basic structure for lesson plan development that is meaningful and contributes to effective teaching is a challenging task. However, when provided with electronic lesson plan templates, preservice teachers have the basic structure when learning to plan for active learning.

References

Davis, B. (1993). *Tools for Teaching*. San Francisco, CA: Jossey-Bass.



Robert M. Torres is an Associate Professor at New Mexico State University

Application/Activity Sheet

Lesson Title	Recognizing Forest Resources
Application Title	Making Paper
Est. Time to Complete	55 minutes (1 class period)
<u>Learner Performance Objective(s) Addressed with Application</u>	
4. Given the procedures, demonstrate the paper making process according to the activity sheet.	
<u>Materials, Supplies, Equipment, References, Etc.</u>	
<ul style="list-style-type: none"> ▪ Tissue paper ▪ Water ▪ Starch ▪ Large mixing bowl ▪ Mixer ▪ Two disposable aluminum pans (used pie pans) ▪ Fine wire mesh ▪ Iron 	<ul style="list-style-type: none"> ▪ Ironing board ▪ Rolling pin ▪ Food coloring (optional) ▪ Paper towels ▪ Brown paper bag ▪ Scissors <p><u>The Earth and AgriScience</u>, Chapter 7, pages 79-89 <u>Activity Manual</u>, page 37.</p>
<u>Connection (Rationale) and Special Instructions</u>	
We get many useful products from trees. Trees may grow naturally or be cultivated on tree farms. Most tree farms grow trees for a specific product.	
Trees are the largest living things. They require care in order to grow well, much the same as given to other crops. Roots, stem (trunk), and crown are the three major parts of a tree. Knowing the science of trees is important in growing them.	
Farming trees involves many important activities. Planting, growing, harvesting and marketing, and manufacturing are the major areas. Lumber, plywood, particle board, paper and other products come from trees.	
Our forestry industry utilizes a very complex process to make paper. However, you can use a simplified process and create your own paper.	
TEACHER INSTRUCTIONS: Demonstrate to students the procedures for making paper. Pair up students into groups of 2-3. Adjust the materials, supplies, equipment, and resources to accommodate the number of students in the class.	
<u>Post Application/Activity Discussion Questions</u>	
<ol style="list-style-type: none"> 1. Can paper be recycled? How is paper recycled? 2. What is the difference between paper and recycled paper? 3. How is colored paper made? 4. Can paper be made from other materials? 5. What are other forestry products? 	

Figure 1. Example Template Cover Page

An Inexpensive Cyber Tool for Your ToolBox

By Edward A. Franklin

I need a bigger toolbox. Not a box that goes in my garage under the workbench, but in my classroom. I found another teaching tool to add to my arsenal to aid me in my war against ignorance and agriculture-illiteracy. Plus it saves me TIME!!

Historically, when it came to computers, I was not one of those teachers that readily jumped on the bandwagon ready to cruise the digital highway. If we examined a chart of "Adopter Categories", I would have been categorized as a "Late Majority" border lining a "Laggard". I could use a word processing program, but beyond that, I needed a weeklong summer in-service session from the folks at Cal-Poly to convince me this was a good thing. I needed Tim "The Tool Man" Taylor to shower me with manly "grunts" to get me excited about using this tool.

Techno-tool

In this day and age of cyber technology and the Internet, web-based instruction is becoming a popular tool of instructors in higher education. Students can enroll in and participate in a university or college course from home or a distant campus and never step foot in the classroom. Teachers and students can engage in dialogue, exchange papers, participate in small group cooperative activities, conduct assessment, and seek outside resources. All in your flannel pajamas.

But how can a secondary agriculture teacher armed with one computer and an Internet connection, with very limited (or no) web page design experience, and a miniscule amount of free time learn such skills to use this technology to his/her benefit? Is this an effective tool for teaching or delivering information? Perhaps this is more of a *management tool* (different slot, same toolbox) that can save you time in

communicating to students, distributing worksheets, quizzes or tests, or getting homework to students who are habitually absent from class.

What kinds of activities can an agriculture teacher do with an on-line website classroom that is accomplished in a traditional classroom? How about most of the management duties you are expected to do on a daily or weekly basis?

There is such a tool out there, and it is FREE to the user. I have used this site as a graduate student in a stand-alone course, and as an instructor utilizing it as a teaching tool to supplement two different university courses. Student response to its use as an accessory to a class has been very favorable.

What department in Sears carries this tool?

You have to go on-line. Go to <http://www.blackboard.com>. Once you arrive at the site you are presented with choices. You can search

for an existing course or create your own. Cruise through the list of courses to see what is out there.

Now, let's create our own.

Before a student can access the digital classroom, the instructor must perform some "classroom preparation". Each class is equipped with similar tools; the look or appearance is up to the instructor. Whether students self-enroll, or enrollment is by the instructor, the availability of the course (starting and ending dates) are determined and controlled by the teacher. User name and passwords may be generated by students (or the instructor) during the initial signup and a one-time access code is all that is needed to be "officially enrolled". Of course each student will need an email address to communicate with the instructor.

Like the beginning of each day's class, the first item a student entering your digital classroom encounters is *Announcements*. These may be updated, modified or removed by the instructor. Directing students to specific areas of the digital classroom, a student may click on any of eight folders that align the website page. These folders may contain materials placed by the instructor, course documents (such as a syllabus, course outline, or student data sheet), tools for student use, communication information, and links to other sites. There is access to behind the scenes of the digital classroom. Think of this as your office area. To get there, go through the Control Panel.

Cast Members Only

The Control Panel is a feature that allows the instructor to access all areas of their digital classroom. Create, modify or remove announcements, assignments, assessment, and user access. Only instructors can gain access to this area, just like the backstage of Disneyland. When a

student accesses the digital class, the control panel button is not available.

Communication Center

The ability to send emails to one student or the entire class, utilize a discussion board, organize a chat room (for your students only), and develop a course calendar with dates of activities, assignments, deadlines, and events are a few of the features in the Communication Center. A digital drop box permits students to submit documents electronically to the instructor for evaluation. The instructor can download and print it out and/or return to the student electronically. Light bulb – what a way to save on paper!

Site Management

The instructor can control what areas and site tools are available for student use (ie. discussion boards, virtual chat, student pages, or email). Modification of the look and appearance of the course is possible and made simple by going to the site management area.

How can a tool like this aid the high school agriculture teacher? What happens when your students who were absent yesterday (or for three days) come back to class? If your students can access homework assignments from their home computer (or the school library, public library, school computer lab), that you put up from your home (or office) the day or evening before, you have eliminated the time you take up during class searching for yesterday's assignment folder that you meant to put back in the file cabinet after class.

Taking the First Step

Determine which students in your program have Internet access at home, or from the school library.

Chances are it is a higher number than you think. If your students have access to a computer lab on campus or in your department, great! Go on-line and visit a blackboard.com class site. See what is available and how it is used. Contact a colleague who uses the technology (email me at eafrank@ag.arizona.edu). Share the idea with your administrator, and contact parents about your plan to integrate the technology into your program.

Can this replace what we do everyday in class? *Absolutely not*. What this technology will do is provide instructors with additional management and teaching tools. If your school has a computer course requirement that all students must pass in order to graduate, why not incorporate this technology into your existing class? If you teach an agriculture computer course, this tool will fit nicely into your curriculum. How about the horticulture or construction technology class? Students can access plant photos from universities across the nation through a link you posted. Construction plans can be posted in assignment folders. A method for students to access assignments when you (or they) are away from class can save you time and energy. No longer will the class have to wait on you to go to the land lab because you are searching your desk for files for student work.

Preparing students for future success should be a goal of every instructor. How we accomplish this should not take more time than what we already commit to our local programs.



Edward A. Franklin is an Assistant Professor at The University of Arizona.



Franklin encourages teachers to consider adding digital classrooms to their teaching toolbox. (Photo courtesy of Iowa State University, College of Agriculture.)

Reining in Distance Education

By Jacklyn Bruce and Travis Trant

In today's society, young people are inundated with choices, from food to music. Unfortunately students have limited amounts of time in which to participate in after school activities; and parents have limited resources and time to take them to all their programs. As children and parents are pulled in several directions, extracurricular associations must adapt or face the reality of losing potential members to sports, dance and other clubs. Can virtual experiences available through the Web help to solve this problem?

One example of an extra-curricular activity that can capture the virtual market is youth equine horse judging for 4-H and FFA programs. To address the problem of competing activities and the loss of potential members of judging teams to those other activities, we have developed a virtual judging team web site that allows youth who participate in a variety of activities to have the opportunity to continue in competitive youth judging without falling behind.

The judging template includes the entire curriculum learned within a classroom setting (overview, oral reasons, halter and performance judging, potential classes), the capability to reproduce the hands-on experience of arena judging and practice sessions (team practices) and an administrative component (team schedule of competitions, an opportunity to meet the team members and coaches, and a guest book) that allows team members and parents to remain updated on team logistics. Our site is also linked to the National 4-H Center and the National FFA Organization, allowing

members to be linked to their national sites and receive the most updated information on the respective organizations.

This site is designed to do several things. First, if a practice is missed, members will be able to visit the site and participate in practice sessions by judging the streaming video and digital pictures. Second, if a member does not feel comfortable with a practice that they attend, they can visit the web site for a "second chance" at judging the practice animals. Finally, the site can be used throughout the season as a "refresher" for team members. They can be asked to go and revisit various practices and rethink some sets of oral reasons.

Extension Agents and FFA Advisors could implement the template design of the online judging, changing any information necessary to fit their individual programs. As the judging seasons continue, practices would be posted in order for missing members to "make-up" practices, or attending members to review practice sessions. Coaches will have the ability to track team members' time spent at the site, and which areas the student elected to view. At the conclusion of the season, coaches could decide whether to retain materials as teaching tools, or expunge and start over with a new set of practice sessions.

Purpose/Objectives

The purpose of the equine online judging site is two-fold. The first is to allow youth to participate in a judging program that, because of time constraints, would not otherwise be available. Students are often pressed to make decisions regarding extra-curricular activities in which they

would like to participate. Our site will negate the necessity of those decisions. The second purpose of the equine online judging site is to serve as a supplement for students who participate in traditional judging practices. The site would allow students a "second chance" to review classes, understand concepts and reconstruct oral reasons to clarify their structure and meaning.

Methods/Projections

Upon arrival at the site, students have the opportunity to choose a variety of choices to explore the information. Each page will contain a different set of information discussing different essential elements of equine judging, from the very basic, to more advanced concepts. Also on the page, parents can find practice schedules and team schedules for the year. Team members, parents, and visitors will also have the opportunity to meet and get to know the team members and the coaches, background information, as well as awards and recognition are added throughout the year to the "Meet the Team" and "Meet the Coaches" section of the site.

Team members must log on to the site to access online practice sessions, digital pictures and streaming video for team practice sessions. They go to the page specifically for team practice sessions, select the date of the session they wish to view and can view the practice session's videos and pictures or oral exercises. This will also be the place that members who attend practices will go to in order to review materials.

The general classroom curriculum is available to any one who visits the site in the remainder of the pages. Students then have the opportunity to use an email program

to send written reasons or class placings to the coach for evaluation.

Significance & Implications

The significance of the on-line equine site is that it allows youth who otherwise would not be able to participate in programs of this kind, due to time or geographic constraints, to be participative members of a team. Greater opportunities for leadership, responsibility and time management are available for youth involved in programs of this kind. Students, who are able to participate in more extra curricular activities, gain a broader range of life skills and competencies that will make them well rounded young adults. Written and oral communication skills gained through judging experiences will serve members well as they take their next steps toward either college or the job market.

This site was borne out of a need recognized by a former extension agent and coach who lost participation in judging programs because youth simply didn't have the time to attend two different practices in a day. Our site is, to our knowledge, the first of its kind. While others have developed content sites, and CD-ROM technologies that cover content knowledge in depth, our site is completely interactive with the practice materials. Students will be able to gain the same information from the site that they would if they had attended the actual judging practice. Our site is designed to develop competencies in the youth

who are not able to attend practices, as well as youth that are attending practices and then using the on-line sessions as supplementary and review exercises.

The implications of the equine site and similar distance education methods are limitless. We see that a site of this kind could be utilized not just in an extension or vocational agriculture program setting, but in youth and adult programs alike. We see this type of distance education being used for not just judging, but junior and adult Master Gardener programs, floriculture programs, or principles of landscape design, just to name a few. Virtually any discipline that is hands-on and can be video-taped could utilize a site of this kind. Eventually, groups that have previously been unable to participate in these kinds of programs will have access to this information because of these kinds of advancements in educational technologies.

Future Plans

The site will soon be expanded to include both livestock and meat evaluation components. Students will no longer be greeted with the first page of the equine site, but with a master site index where they will have the opportunity to decide which site to visit. Anyone will have the chance to gain basic content knowledge in all three areas. Team members will be able to experience virtual practices by signing in to each individual site.

We hope to pilot-test the site to

youth already participating in traditional judging programs in these areas. Using the data from the pilot-tests, we hope to make changes and eventually market the idea to extension educators and vocational agriculture instructors who coach these young people.

References

Mielke, D. (1992, December). *Effective Teaching in Distance Education*. *ERIC Digest*. ED436528. Retrieved November 16, 2001 from http://www.ed.gov/databases/ERIC_Digests/ed436528.html

Willis, B. (1992, November). *Instructional Development for Distance Education*. *ERIC Digest*. ED351007. Retrieved November 16, 2001 from http://www.ed.gov/databases/ERIC_Digests/ed351007.html

Willis, B. (1992, November). *Strategies for Teaching at a Distance*. *ERIC Digest*. ED351008. Retrieved November 16, 2001 from http://www.ed.gov/databases/ERIC_Digests/ed351008.html

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Travis Trant is a Graduate Assistant at Texas A&M University.

Visit Virtual Youth Equine Horse Judging at:

<http://www.aged.tamu.edu/classes/611/student%20projects/jackie/index.htm>

The Intersection of Curriculum and Technology

By Bradley C. Greiman, Weston D. Walker, Jim Riley, and Robert J. Birkenholz

September 24, 2001 8:55 PM

Dear Dr. Mentor-

How are things on campus? I am sending you this email in hopes that you can give me some advice on a curriculum issue. The Advisory Committee wants me to teach several adult classes on beef and forage topics - - - there has been some interest in forming a beef alliance as well as rotational grazing. There is very little beef or forage curriculum in my files or on the bookshelves at school, and most of it is out-of-date. Do you have some advice on where to go for reference material? Thanks and cheer on the football team.

New B. Kidd [agtchr@hs.edu]

September 25, 2001 8:05 AM

Hello New Kidd-

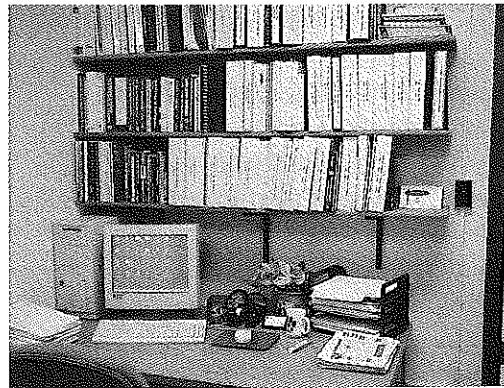
I just attended the State Ag Ed Adult Educator Conference, and heard excellent presentations on the new Beef Management and Forage Management curriculums. Each is on a CD, and has links to extension and industry material. They can be used for teaching your adult class as well as your high school students. The football team is not doing too well, so our cheer has become "Wait until the basketball season!"

Prof Mentor [ivoryt@univ.edu]

Even though this email was from a beginning agriculture teacher, the request for curriculum assistance could also have been from an experienced teacher. What makes the *Beef Management* and *Forage Management* curriculums mentioned by Prof Mentor so unique?

The Traditional Curriculum

Visualize the office of an agriculture teacher that has numerous references related to beef and forage management.



Can you picture a shelf with beef and forage textbooks, curriculum guides, and extension notebooks? Now focus your attention on the file cabinets, and the teaching materials that are found there. This is where additional management pamphlets, and industry materials are located. Finally, shift your gaze to the computer on the teacher's desk, and think about the Internet sites that can be accessed to teach beef and forage management topics, or to gain additional reference material. When it is time to teach adults or students, the agriculture teacher usually goes to these locations to obtain reference materials. Traditional curriculum projects list references, but few include these materials with the instructional unit.

In September 2001, a new approach to curriculum design was introduced to Missouri agricultural educators. A *Beef Management* curriculum, and a *Forage Management* curriculum were distributed to teachers on a

compact disc (CD). The curriculums consist of a "library" of resources that provide teachers with an array of references in one convenient location.

The curriculum lessons contain hyperlinks to extension bulletins, industry materials, websites, and other references. Most of the hyperlinks are to PDF and HTML files stored on the CD, and do not require an Internet connection. Other hyperlinks are to http "hot links", and require access to the Internet.

Clicking on the hyperlink provides immediate access to the reference. This feature is a time saver for instructors, as the curriculums include approximately 500 extension publications from 16 different states. Rather than trying to locate an extension publication in a notebook or file cabinet, the hyperlink allows teachers to instantly access the reference, and print a copy.

Other reference materials consist of hyperlinks to on-line magazines, organizations, cooperatives, corporations, and private industry.

Curriculum Development Process

The Curriculum Development Model of Finch and Crunkilton (1999)

Forage Management Lesson Topics

- κ Orientation to Forage Management
- κ Establishment of Forages
- κ Renovation and Maintenance of Forages
- κ Making, Harvesting, and Storing Quality Forages and Seed
- κ Management of Grazing Systems

was utilized to develop the *Beef Management* and *Forage Management* curriculums.

During the 1999-2000 school year, a survey of Missouri Agricultural Instructors of Adults, Young Farmer members, State Staff, and agribusiness personnel identified beef management (especially cow/calf topics), hay and pasture management, and value-added products or niche marketing as important curriculum needs. The survey revealed a growing number of part-time farmers with off-farm income from one or both spouses. This community-related data convinced the Missouri Department of Elementary and Secondary Education to fund curriculum projects for beef and forage management. An advisory committee for each curriculum provided input and guidance for the projects.

Goals and objectives of the curriculum projects were to:

§ Provide teachers with numerous references in one convenient location (CD)

§ Hyperlink to extension bulletins, industry material, websites, and other reference material

§ Develop a curriculum to supplement each teacher's lesson planning

§ Design PowerPoint™ presentations to guide the discussion of key points

Beef Management Lesson Topics

- κ Introduction
- κ Selection & Genetics
- κ Nutrition
- κ Marketing
- κ Health
- κ Facilities
- κ Costs & Returns of Beef Systems

§ Plan a curriculum that could be utilized with adults and/or high school students

Lessons in each curriculum include a review, objectives, motivation, key points, introduction of information, discussion, conclusions, and materials needed. PowerPoint™ presentations, hand outs, and transparency masters have been developed for each of the lessons. In the *Beef Management* curriculum, a 35-head cow herd is utilized as a context for discussion and key points.

Using a problem-solving approach, adults or students are prompted to formulate management suggestions for the owner. The *Forage Management* curriculum stresses application of management decisions to the individual's operation. Analysis of soil and forage tests, interpretation of soil maps, and utilization of aerial photographs are some activities in the curriculum.

In-service training for the two curricula was conducted during September, 2001, at the Missouri Adult Agricultural Education Conference, and at a statewide Beginning Teacher Induction Program. Each teacher received a CD of the *Beef Management* and *Forage Management* curriculums. After reviewing the curricula materials, Dr. Terry Heiman, State Director of Agricultural Education stated, "I believe these curriculum projects set the standard for future use of technology in the classroom." The curriculums can be accessed at <http://www.ssu.missouri.edu/AgEd/resource.htm>.

References

Finch, C.R., & Crunkilton, J.R. (1999). *Curriculum Development in Vocational and Technical Education* (5th ed.). Needham Heights, MA: Allyn & Bacon.



Bradley C. Greiman is a former Iowa Agriculture Instructor and currently is a Graduate Assistant in the Department of Agricultural Education at the University of Missouri. He authored the *Beef Management* curriculum.



Weston D. Walker is a former Missouri Agriculture Instructor and currently is a Graduate Assistant in the Department of Agricultural Education at the University of Missouri. He authored the *Forage Management* curriculum.

Jim Riley is the Missouri Farm Business Management Analysis (FBMA) Coordinator and Instructor in the Department of Agricultural Education at the University of Missouri. He coordinated the development of the curriculum projects.



Dr. Robert J. Birkenholz is a Professor and Chair of the Department of Agricultural Education at the University of Missouri.

Principles of Forest Management: An Innovative Approach to Agricultural Teacher Education

By Kris M. Irwin

Equipped with technical skills and knowledge, new teachers are prepared to enter a classroom possessing the ability to lead students through effective learning activities using efficient teaching methods.

Students enrolled in the agricultural education program at the University of Georgia (UGA) are engaged in such a training program. Integral to this successful teacher education program are the interdisciplinary partnerships that provide quality instruction covering subjects outside of education - such as forestry. This includes the understanding of instructional technology, and its proper use as a teaching aid.

Background

Students earning a Bachelor of Science degree in agricultural education at UGA are required to complete six support courses. Principles of Forest Management (FORS 5730/7730) is one of these six courses.

The innovation of this course is not the course itself, but rather the collaborative process between the Warnell School of Forest Resources, faculty from Agricultural Education, and the Area Forestry Teachers from the Department of Agricultural Education.

First and foremost, it was agreed by all partners that students completing this course must understand what the practice of forestry is all about. It was also agreed that students would develop a basic understanding of tree biology and forest ecology, along with forest conservation and protection practices. We decided to use the

Forest Science I course, an approved curriculum under the State Department of Agricultural Education. The course covers a broad spectrum of forestry topics relevant to building a foundation of knowledge and understanding of forestry.

In addition to learning content information, a priority objective was to engage students in learning how to apply content knowledge to successful classroom instruction.

Georgia is the only state to have its entire agricultural education curriculum on CD. Students were provided a copy of the Curriculum Resource and Reference CD set.

Produced by the Georgia Department of Education and updated each year, the HTML-based CD's are designed to be navigated using a web browser, just like a website. Students received the CD set for a couple of reasons: to allow them the opportunity to navigate around the CD, and explore the contents of the CDs and to emphasize and demonstrate the use of instructional technology and how to apply it in their own classroom. Disk #1 contains lessons for both middle and high school grade levels, teachers' resources such as a course calendar and maps, topic-specific content, field guides for career development events, and tree identification quizzes for forestry. Disk #2 is a collection of photos, clip art, music, free shareware to create crossword puzzles and word search games, and presentations created using Microsoft PowerPoint.

Class Requirements

Remember when you landed your first teaching job, and how busy you were getting ready for the first day of class. You were inundated

with unfamiliar tasks. To help alleviate the pressure of starting a new teaching job, FORS 5730/7730 prepares students with tools, skills and knowledge so they can hit the ground running. In an effort to combine forestry content and teaching strategies, students were required to produce two items that would be useful to them when they start teaching: a Tree Leaf Notebook, containing dried and mounted samples of 25 native Georgia trees and descriptive narrative, and a Teaching Portfolio packed with curriculum lessons and supporting materials. For the graduate students in the class, not only did they have to complete the Tree Leaf Notebook and Teaching Portfolio, they were each assigned one of the eleven units and required to complete the following: 1) an "end of unit" exam containing at least 40 questions; 2) a PowerPoint presentation for each lesson in the unit; and 3) a learning game, using software provided by the state agricultural education curriculum specialist.

Learning about the subject of forestry is best accomplished by minimizing the amount of time spent lecturing and maximizing time devoted to hands-on experiences. The approach used to teach FORS 5730/7730 was no exception. For example, the first class session was spent covering topics such as common terminology and concepts related to forest management and forest safety. It was made very clear to the students that unsafe actions in the forest would not be tolerated. Later in the semester, one class period was spent in the computer lab learning about the use and application of instructional technology. New

teachers must know how to use computer software and teaching aids on CD, understand the complexity of the world wide web, and how to integrate these technologies into their classroom activities without hesitation.

When not in the classroom, students were in the woods. It was here that they learned how to use different forestry equipment to measure tree heights and diameters and calculate total volume of timber. They walked through and evaluated silvicultural systems (clear cut, seed tree, and shelterwood) to understand how the different systems work and when they are applied to reach a desired outcome. They collected leaves and learned how to use a dichotomous key to identify trees. They even explored the process of genetic tree improvement research in a greenhouse.

The use of instructional technology as part of the course materials makes it innovative. Remember, each student was required to produce a Teaching Portfolio. At a minimum, a printed copy of all eleven units of the Forest Science I course, associated references, and all resource materials are required. These items alone comprise the bulk of their portfolio and can be downloaded and printed from Disk #1. But, to earn a higher grade, students had to put forth extra effort. They were strongly encouraged to create their own PowerPoint presentations, handouts, overheads, lists of web sites with a description of how each site will enhance student learning, or anything (i.e. brochures, publications, etc.) that added value to their collection of teaching materials.

The Pay Off

All of the work put into planning, designing and conducting this course received the attention of Mr. James Woodard, State Director of Agricul-

tural Education. In a letter to the Deputy State Superintendent of Schools in the Office of Student Learning and Achievements, in which he described the partnership and capacity building activities, Mr. Woodard wrote, "...consider sharing this with the board to demonstrate a model for training future teachers to meet the needs of our program." Obviously, collaborative efforts produce positive results. This model which demonstrates collaborative efforts to build an effective program using innovative approaches to achieve student learning can be applied in college or high school classrooms.

A Model of Your Own

What was done to offer the FORS 5730/7730 class to Agricultural Education students at the University of Georgia provides an example of the process that you might do to get a new class started at your school. Here are some simple suggestions to help you get started.

First, identify your teaching objectives. Then, before you go any further, take time to review your entire unit of study and identify the lessons that require outside help. Take forestry for example. You don't have to have a forestry degree to teach forestry. There are agencies, organizations, businesses, and private consultants that can provide subject matter expertise. All it takes is for you to call and ask them to help. When asking for assistance, be sure to make it clear that you are teaching a forestry class and need a technical expert to assist with the class instruction. Be prepared to answer exactly what topics you need assistance with, how much time is involved, and what exactly you need.

A word of caution, don't wait until class has started. Start planning early! Once you find your speakers, get commitments from them and

follow-up with a letter confirming their participation. If you are going to have an outdoor lab be sure you have all the necessary equipment and travel arrangements secured.

Organizing the class is just one part of the equation - student learning is the other. Design classes with active learning such as measuring tree height and diameter, collecting leaves for a notebook, observing a controlled burn, planting trees on the school grounds, and using computers to analyze a data set. These are just a few of the ways to involve students in their own learning. However, it is up to you, as the teacher, to make it happen.

Another issue is how to assess learning. Here are a few ideas that you can try. Have students research a topic or investigate a social issue. Then ask them to prepare and present their findings to the class using digital images, graphs, and text. Or they can construct a portfolio containing the same information. Give them plenty of direction with clearly defined expectations, but allow creativity.

Arming students with critical thinking skills and the ability to make informed decisions based on facts is vital. Just remember, adequately prepared teachers is the first step towards providing quality educational experiences and increasing student learning.



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Missouri Summer Technical Institutes: Professional Development for Teachers

By Weston D. Walker, Gordon V. Laboube, and Bob R. Birkenholz

Agricultural technology is always changing and as a result, agricultural curriculum and the knowledge and skills of agriculture teachers can quickly become outdated. Since new information and methods concerning agricultural practices are always on the horizon, agriculture teachers need opportunities to update their knowledge and skills to stay abreast of new technological developments. However, agriculture teachers are busy with their daily responsibilities including teaching several different courses, supervising SAE programs, and coordinating FFA activities, leaving minimal time for technological updates. So when do agriculture teachers have time to enhance their technical agriculture knowledge and skills?

Another issue facing teachers is the desire to earn an advanced degree in order to maintain their professional teacher certification. Due to time constraints, a choice must often be made either to take courses that will count toward a graduate degree, or to take courses that are more relevant to the subjects that they teach on a daily basis. Most agriculture teachers would prefer both graduate credit that counts toward a degree and professional development that enhances their knowledge and skills in teaching their subject matter. Is it possible to have the best of both worlds?

Following recommendations from the Missouri Vocational Agricultural Teachers Association (MVATA) Professional Development Committee and Executive Committee, an

inservice needs survey of Missouri's agriculture teachers was completed by King and Garton (2000). Thereafter, Missouri Summer Technical Institutes were conceptualized to meet the professional development needs of agriculture teachers. Consideration was given to problems associated with scheduling inservice activities during the school year. The Summer Technical Institute program was designed to provide Missouri agriculture teachers with opportunities to develop and enhance in-depth, high quality, and state-of-the-art technical information and skills. In addition, participants would be able to enroll for two semester hours of graduate credit or earn Continuing Education Unit (CEU) credit to document their professional development efforts.

Faculty in Agricultural Education at the University of Missouri proposed the concept of conducting intensive, one-week inservice programs during the summer months to enhance teachers' knowledge and skills. A range of Summer Technical Institutes were envisioned in the following subject matter areas: Biotechnology, Plant & Soil Sciences, Animal Sciences, Agricultural Systems Management, and Agricultural Management & Economics. A "draft" schedule of the proposed topics was developed and presented to the Missouri Joint State Staff in Agricultural Education consisting of practicing teachers, supervisors, and teacher educators.

The original proposal was designed to accommodate the subject matter needs and interests of teachers in a broad range of technical areas. Each subsequent year of the program was to continue to provide for Summer Technical Institute

programs in each of the primary categories listed above.

In November, 1999, a Professional Development Specialist was employed through a contract arrangement with the Missouri Department of Elementary and Secondary Education. The primary responsibilities of the Professional Development Specialist include planning, coordinating, and evaluating professional development activities for agriculture teachers in Missouri. Specifically, the Professional Development Specialist has primary responsibility for organizing the Summer Technical Institute programs.

Missouri Summer Technical Institutes were first offered in the summer of 2000. Each Summer Technical Institute was organized to utilize quality facilities and the technical experts most relevant to the content addressed, thereby providing the most conducive learning environment available.

Conceptualizing the Summer Technical Institutes program involved the following program objectives, which have guided the planning process:

1. Demonstrate and promote the integration of academic concepts.
2. Integrate technology (agribusiness & educational) into the educational process.
3. Emphasize 'all aspects of the industry' and entrepreneurship.
4. Improve the technical knowledge of agriculture teachers.
5. Develop & enhance the technical competence and skills of agriculture teachers.

In 2000, a total of 117 agriculture teachers enrolled in eight Summer Technical Institute sessions, compared to 151 teachers (approximately 40% of Missouri's secondary agriculture teachers) enrolled in the eight sessions of 2001. Enrollment was limited to 10-25 participants per technical institute on a "first come, first served" basis. In 2000, there were 196 graduate credit hours awarded, in addition to 78 hours of CEU. While in 2001, a total of 252 hours of graduate credit and 85 hours of CEU were earned.

The general consensus of Missouri agriculture teachers participating in the technical institutes has been that the content and quality of instruction have been helpful in meeting their professional development needs. Participant evaluations from the Summer Technical Institutes included such comments as:

- § *Fun and educational.*
- § *Excellent, very enjoyable, a quality experience.*

- § *I learned more in one week than four years of teaching.*
- § *Top of the line, it was great.*
- § *Excellent class, had a great time working with others from across the state.*
- § *Good balance of theory and practice.*
- § *This is the best course I have taken in years.*

Thirteen Summer Technical Institutes have been identified by the MVATA's Professional Development Committee to be offered in June or July of 2002. The enrollment period will begin on February 1, 2002 and remain open until March 15th.

Registration fees vary from \$100 to \$250 for each weeklong Summer Technical Institute. Each institute is offered for two hours of graduate credit or for CEU credit. Enrollees seeking to earn graduate credit are expected to pay additional registration fees equal to the cost of two hours of graduate tuition. Many teachers are able to receive Profes-

sional Development funding from their local school district to pay the registration fees for attending a Summer Technical Institute.

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References

King, B., and Garton, B. (1999). *An Analysis of Professional Development Needs of Agriculture Teachers*. Proceedings of the 53rd Annual Central Region Research Conference in Agriculture Education. 152-161.



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2002 Summer Technical Institutes: Tentative Schedule

- Animal Nutrition Technology
- Infusing Biotechnology in the Agricultural Education Curriculum
- Applied Animal Reproductive Techniques
- Greenhouse Operation and Management Level 1
- Greenhouse Operation and Management Level 2
- Turf Grass, Landscape & Golf Course Management
- Agricultural Power Technology - Small Engines
- Forestry
- Food Science Technology
- Crop Scouting and Global Positioning Systems
- Ag Mechanics Laboratory Management Level 1

Revising Agricultural Education Preservice

By Thomas R. Dobbins and
Carrie A. Covington

In the spring of 2000 the Biology Instruction and Agricultural Education (BIAE) Department at Clemson University recognized that our current curriculum was on life support and needed to be redesigned. We had to make drastic changes in our preservice curriculum. Why—one may ask. Today over 40% of our Agricultural Education students have never been enrolled in a high school agriculture class. The agricultural landscape of South Carolina was changing, accountability standards for high school programs were changing and at the college level we were not. We received permission from our Dean to proceed with building a new curriculum for our Agricultural Education program. He said, "I am giving you a blank check, so do it and do it correctly." Our mission was difficult but essential for survival.

According to the Committee on Agricultural Education in Secondary Schools Board on Agriculture of the National Research Council (1988), "Teacher preparation and in-service education programs must be revised and expanded to develop more competent teachers and other professional personnel to staff, administer and supervise educational programs in agriculture related areas. Colleges of Agriculture particularly in land-grant universities should become more involved in teacher preparation and in-service education programs, curriculum reform, and development of instructional materials and media,"(p.7). Darrow and Henderson stated "A curriculum that addresses the needs of graduates in the 21st century is an 'imperative priority' for faculty and administrators in the

colleges of agriculture," (p54). The challenge for colleges of agriculture will be to construct a curriculum that will produce the desired "quality product" within a reasonable time frame and with the resources that are available to the institution (Bjoraker, 1987 p.13)

Upon beginning the process of redesigning the Agricultural Education undergraduate curriculum at Clemson University, a curriculum committee was formed. The members of this committee consisted of Clemson Biology Instruction and Agricultural Education Faculty, Regional Agricultural Educators, South Carolina Agriculture Field Staff, South Carolina Agriculture Teachers, Agribusiness representatives, the South Carolina Department of Education, and undergraduate and graduate students in the Agricultural Education Program. The Biology Instruction and Agricultural Education Department Chair appointed the Clemson faculty represented on the committee. The entire state staff was on the committee to represent all areas of South Carolina Agricultural Education programs. The agriculture teachers that were on the committee were all Clemson Agricultural Education graduates and were selected by the leaders of the South Carolina Association of Agricultural Educators. The South Carolina Farm Bureau and the Farm Service Agency of South Carolina were chosen to represent agribusinesses because of their leadership and connections with South Carolina agriculture. A representative for the State Department of Education was chosen to assist with teacher certification requirements. The Agricultural Education faculty at Clemson University selected the two undergraduate and two graduate students

that served on the committee.

After the committee was formed, a two-day planning workshop was held. During this work period the curriculum committee was charged with redesigning the Agricultural Education Undergraduate curriculum at Clemson University. The committee members were encouraged to reach for the sky and, that the sky was the limit. The committee started off with only the general education requirements, then determined the course framework that was needed in order to have a successful curriculum. The committee determined what courses were needed and what they should entail. After the framework was complete, several new courses were built:

- **AG ED 102** - Agricultural Education Freshman Seminar
- **AG ED 103** - Multiculturalism in Agricultural Education
- **AG ED 200** - Agricultural Applications of Microcomputers
- **AG ED 202** - Agricultural Education Sophomore Seminar
- **AG ED 203** - Teaching Agriscience
- **AG ED 302** - Agricultural Education Junior Seminar
- **AG ED 303** - Mechanical Technology for Agricultural Education
- **AG ED 402** - Agricultural Education Senior Seminar
- **AG ED 404** - Biotechnology in Agricultural Education

For these new courses, course approval forms were completed with a detailed course description, syllabus and outline. We have worked very closely with the Agricultural Mechanization, Forestry and Horticulture departments to redesign courses that will meet the needs of our students as well as their students. These courses were Forestry 305-Elements of Forestry and Horticulture 212-Introduction to Turfgrass Culture. The Mechanical Technology for Agricultural Education course will also meet the needs of Agricultural Education, Agricultural Mechanization, Forestry and Horticulture students. This "new curriculum" went through twenty-two revisions, from faculty and staff before the process was completed.

The final curriculum packet consisted of a four-year course plan for a Bachelors of Science Degree in Agricultural Education, course descriptions for all required courses and justification for the newly designed courses. The Clemson Biology Instruction and Agricultural Education faculty then reviewed this packet for approval. Upon their approval, the curriculum packet was sent to the College of Agriculture, Forestry and Life Sciences Curriculum Committee where it was approved. The curriculum then went to the Clemson University Curriculum Committee where it was approved. The new and improved undergraduate curriculum for Clemson University Agricultural Education's Program will go into effect for the Fall 2002 semester.

What makes this curriculum unique is that stakeholders designed the curriculum with the student's needs being the guiding principle. Dr. Bill Wehrenberg, Dean of the College of Agriculture, Forestry and Life Sciences, told the committee that if the department truly redesigned our

curriculum he would support the new curriculum financially to make it happen. As a result we furnished a lab to teach Agriscience and Biotechnology and hired a new faculty member, Dr. Sam Sparace, to design and teach our new agriscience and biotechnology courses. Dr. Sparace believes that he must demonstrate the science connection between chemistry, science and biology so the students can do the same when they become high school agriculture teachers. Sparace stated that a large part of what makes the courses unique is that these courses are designed for agriculture teachers and their needs, with the idea that some of the information will be taught in their classroom. He also stated that the biotechnology course is unique because it is designed for agriculture education teachers with hopes that the science of biotechnology will be taken to the end user and will fill in the information gap. Dr. Sparace believes that part of learning to teach is learning to design and modify experiments.

According to Diamond (1989) one of the first problems facing an established instructional development unit is getting academic departments and faculty to commit to instructional innovations. Our department was able to get our college dean to support our new curriculum; moreover, we were able to work with other departments to redesign courses not only to meet the needs of our students but also to meet the needs of their students. This process took commitment, time, dedication, cooperation and teamwork. However, the "new" curriculum will not only benefit our Agricultural Education students but will also enhance their future students' knowledge of agriculture at the high school level.

References

Bjoraker, W.T. 1987. Concepts and philosophical issues in food and agriculture undergraduate education with basic guidelines for curricular planners. In: E. Porath (Ed.) Curricular innovation for 2005: Planning for the future of our food and agricultural sciences (pp. 5-32). Madison, WI: U.S. Department of Agriculture, North Central Region Curricular Committee.

Committee on Agricultural Education in Secondary Schools Board on Agriculture National Research Council. (1988). *Understanding Agriculture-New Directions for Education*. Washington, DC: National Academy Press.

Darrow, E.E. and J.L. Henderson. 1987. Strategies for effective curricular modification. In: E. Porath (Ed.) Curricular innovation for 2005: Planning for the future of our food and agricultural sciences (pp. 46-56). Madison, WI: U.S. Department of Agriculture, North Central Region Curricular Committee.

Diamond, R.M. 1989. *Designing and improving courses and curricula in higher education*. San Francisco: Jossey-Bass.



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Service Learning as a Vehicle for Innovation

By Mikel Woods

Throughout the 1990s, the use of service learning increased dramatically in both K-12 and higher education. Educators at all levels report that well-designed and implemented service learning activities can help address unmet community needs while simultaneously providing students the opportunity to gain academic knowledge and skills (Corn & Trexler, 2000). Researchers and teachers note that service learning often increases student self-esteem, promotes personal development, and enhances a sense of social responsibility and personal competence (Kraft, 1999).

What is Service Learning?

Service learning may be described as both a philosophy of education and an instructional method. As a philosophy of education, service learning reflects the belief that education should develop social responsibility and prepare students to be involved citizens in democratic life. As an instructional method, service learning involves a blending of service activities with the academic curriculum in order to address real community needs while students learn through active engagement.

Benefits of Service Learning Involvement

National studies have confirmed the benefits of service learning for students, demonstrating that participation in volunteer service during K-12 or higher education has widespread positive effects on students' academic and personal development (Conrad & Hedin, 1995). First, participation in service

positively affects students' commitment to their communities, helping others with difficulties, promoting racial understanding, and influencing social values. Second, participation in service strengthens the development of important life skills, such as leadership abilities, self confidence, critical thinking, group problem solving, and conflict resolution. Third, participation in service also has a unique positive effect on academic development, including grades earned, degrees sought, time devoted to academic endeavors, academic self-confidence, and students' self-assessments of knowledge gained. Finally, participation in service can translate into career advancement regardless of discipline, as is attested by the fact that many graduates have ranked volunteer experience as the single most important factor in gaining employment (Conrad & Hedin, 1995).

Rationale for Service Learning in Agricultural Education

Agricultural education scholars cite the following reasons that a service learning program provides valuable educational experiences: 1) students learn and develop through active participation in thoughtfully organized service experience that meet actual community needs and that are coordinated in collaboration with school and community; 2) provides a student with an opportunity to use newly acquired skills and knowledge in real-life situations in their own communities; and 3) enhances what is taught in school by extending student learning beyond the classroom and into the community and helps to foster the development of a sense of caring for others (Corn & Trexler, 2000; Woods, 2001).

Distinguishing Forms of Experiential Education

Service learning, community service, internships, and other types of field education such as Career Development Events (CDE) are all forms of experiential education. They do differ, however, as to their primary focus and beneficiaries. Community service involves students providing assistance to individuals, organizations or the community. The assistance can be direct (providing community beautification by planting flowers or picking up trash in a park), or indirect (organizing a food drive or doing clerical work for an animal shelter). In all cases, the primary focus is on providing a service to a recipient. Internships and or CDEs focus primarily on the student's learning and the primary beneficiary is the service provider. Service learning involves blending the key elements of community service and internships/CDEs so both the service provider and the service recipients benefit. These benefits result from a dual focus on the service being provided and the learning that will occur.

Conclusion

Education put into practice through service is a key to honoring the American agricultural education promise set forth by the Smith Hughes Act of 1917. While no single formula for academic improvement fits every agricultural education program, innovative service learning is invariably a key feature of local programmatic and student success. By solving real-life problems, students engaged in service learning are challenged to exercise leadership and responsibility. Citizenship is something we learn, not something we merely inherit. Improving our

agricultural education programs requires parental involvement and the participation of the private sector and the full range of every community's resources. Service learning as a vehicle for innovative curriculum ideas and practices in agricultural education can help agricultural education students and FFA members to understand and to respect each other, and to advance the role that agriculture and natural resources plays in society.

Yet, just as innovative curriculum ideas lie in the promise of service learning, there are many challenges to successful use of service learning in agricultural education, including the already overcrowded curriculum, the

difficulties of arranging successful community service-learning sites, and linking service learning to state and national curriculum standards. Nevertheless, as more agricultural educators take on these challenges, innovative and successful approaches will emerge.

References

- Conrad & Hedin, (1995). School-based Community Service: What we know from research and theory. In *Experiential Learning in Schools and Higher Education*, ed. R. Kraft and J. Kielsmeier. Dubuque, Iowa: Kendall/Hung Publishing Company.
- Kraft, R. (1999). Service Learning: An Introduction to Its Theory, Practice, and Effects. In *Advances in Education*

Research, ed. Judy Craig. Washington, DC: National Library of Education.

Corn, A. & Trexler, C. J. (2000). *Steering through turbulent waters while developing a community of practice: Struggles in an undergraduate leadership course based on service learning*. Proceedings of the National Agricultural Education Research Meeting, 27.

Woods, M. (July - August 2001). *Service Learning: Philosophy to Practice*. Agricultural Education Magazine, Volume 74, Issue 1, pg. 24-25.

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Elements of Innovative Service Learning

- Integrated Learning**
 - The service learning component has clearly articulated knowledge, skill, or value goals that arise from the broader classroom goals.
 - The service informs the academic learning content, and the academic learning content informs the service.
 - Life skills learned outside the classroom are integrated back into classroom learning.
- Quality Service**
 - The service responds to an actual community need that is recognized by the community.
 - The service is student-appropriate and well organized.
 - The service is designed to achieve benefits for students and the community.
- Collaboration**
 - The service learning component is collaboration among as many partners as is feasible: students, community-based organization staff, school administrators, teachers, and recipients of service.
 - All partners benefit from the service component and contribute to its planning.
- Student Voice**
 - Students participate actively in the reflection sessions, evaluations, and celebrations; and take on roles appropriate for their maturity and commitment level.
- Civic Responsibility**
 - The service learning project promotes students' responsibility to care for and contribute to the community.
 - By participating in the service learning component, students understand how they can impact their community.
- Reflection**
 - Reflection establishes the connections between the students' service experiences and the academic curriculum.
 - Reflection occurs before, during, and after the service experience.
- Evaluation**
 - All partners, especially the students, are involved in evaluating the service learning project.
 - The evaluation seeks to measure progress toward the learning and service goals of the project.

Innovative Service Learning Ideas

By Mikel Woods

Below are just a few innovative ideas to jump start your AgriScience curriculum and learning through service.

Planting a Garden for a Food Pantry - Plant your own class or school garden in a designated plot on the school grounds. Children of all ages can learn about the different parts of the plant, the process of growing food, and how to take special care of their garden. When it's time for harvest, donate all of the proceeds to your local food pantry!

Oxfam Hunger Banquet - The Oxfam Hunger Banquet is a powerful tool that brings to life the inequalities in our world and challenges us, as the more economically fortunate, to realize how our decisions affect others in the world. Few leave a Hunger Banquet with full stomachs, but all leave filled with a greater understanding of the problems of

global hunger and poverty and the motivation to do something about it. Free Oxfam American Hunger Banquet materials can be found at (www.oxfamamerica.org).

Into the Streets - Into the Streets is a national initiative that was designed to engage students in community service on a regular basis by spending a day getting "Into the Streets" and getting involved in the issues we face as a global community. For more information, check out the Campus Outreach Opportunity League web site (<http://www.cool2serve.org>).

Seeds of Hope...Harvest of Pride - Brighten up the lives of our senior friends with gardening. Senior living vegetable gardens and the hope they bring for changing people's lives are at the very heart of the "Seeds of Hope...Harvest of Pride" program. With seeds, soil, and sweat, AgriScience students work steadily, with genuine passion

and commitment, to make their senior friends' lives a little brighter. Students adopt a senior friend, build small garden boxes, help plant, and ultimately harvest. For more information, check out the Ohio State University web site (<http://www.bright.net/~gardens/tools.html>) for lesson plans and ideas.

From the Roots Up - The Growing Communities Curriculum makes the community gardening movement's collective experience and wisdom accessible to the hundreds of organizations and grassroots groups throughout the country who are looking for guidance in maximizing the potential of urban gardens to develop people's effectiveness in dealing with social, environmental and economic problems. For more information, check out the American Community Gardening Association web site (<http://communitygarden.org/programs/roots.html>).

Plants Grow Children - The Plants Grow Children program is aimed at linking AgriScience students with kindergarten through sixth graders. The program does more than have AgriScience students teach plant science and stimulate an interest in gardening. Classroom gardening projects have been documented to increase understanding of specific concepts; increase enthusiasm and an interest in science, plants, and learning; increase caretaking and nurturing behavior; increase a sense of pride, a sense of accomplishment, self-esteem, and confidence; and improve environmental awareness and concern. For more information, check out the Washington State University web site (<http://benton-franklin.wsu.edu/garden/plantsgrowchildren.htm>) for ideas.

May - June 2002 Issue

Theme: *The Role of Career Education in the Agricultural Education Curriculum.*

To what extent is career education emphasized in the career curriculum in Agricultural Education? Is there a career education plan or does it just happen? How do we help students learn using career education as a focus?

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