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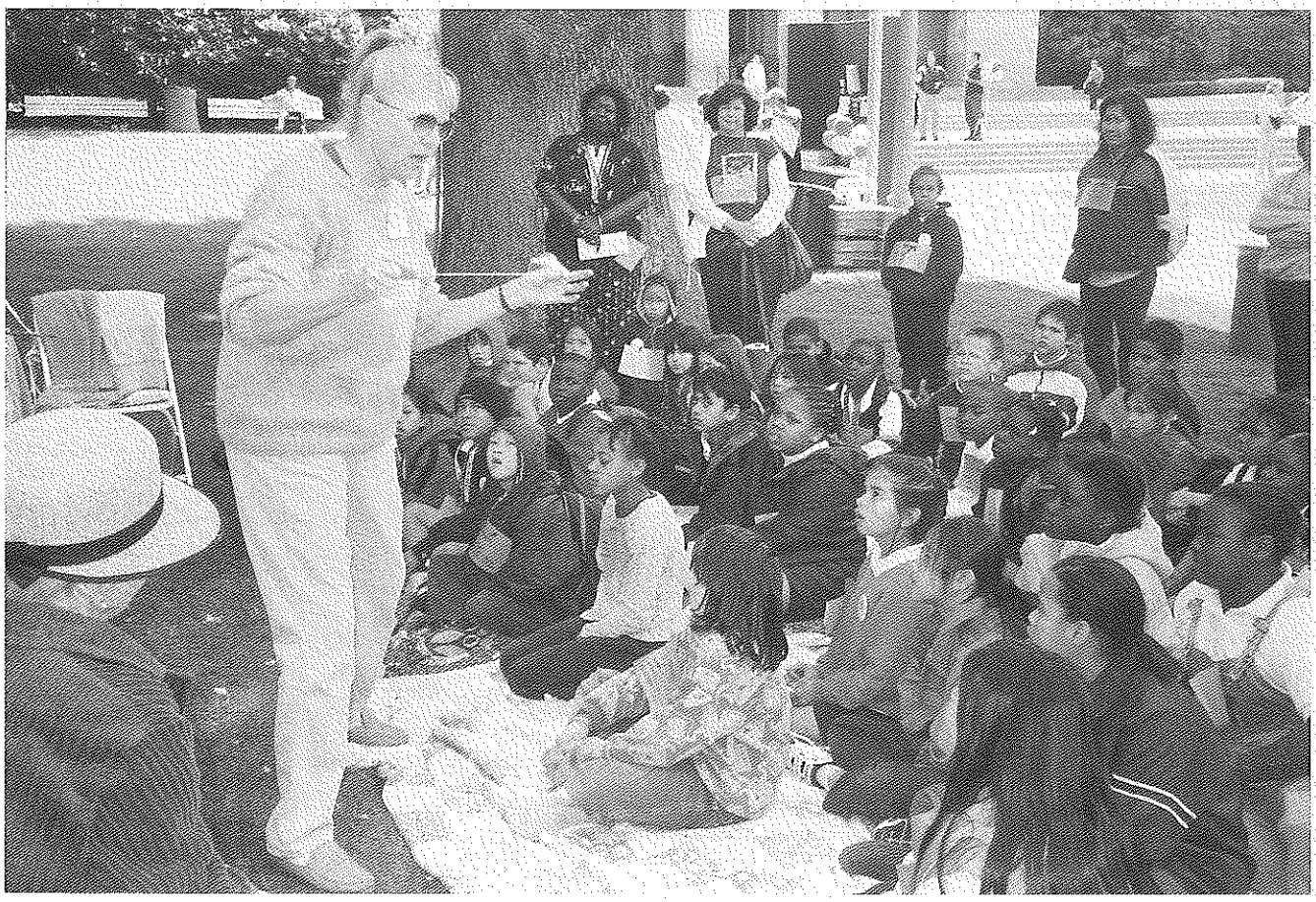
Achieving 2020

Goal 3: All students are conversationally literate in agriculture, food, fiber, and natural resource systems.



Conversational Literacy:
A Moving Target That Has Yet to be Defined

By Cary Trexler

> *"Through the use of language we link the cognitive with the social."*

When asked to edit this issue of the Agriculture Education magazine, I was pleased to learn that the theme was to focus on the third goal of the National Council for Agricultural Education's vision for a preferred future as outlined in Reinventing Agricultural Education for the Year 2020. Goal 3 states that "all students are [to be] conversationally literate about the agriculture, food, fiber, and natural resources (AFFNR) systems." From my perspective as a person who has helped establish public school agri-food system literacy programs and now as a university professor, I wonder about what exactly we, as a profession, believe conversational literacy should entail. I believe that history has much to tell us about our road ahead.

Until the 1800s, the word literacy did not exist, only the adjective literate. Literate was used to describe "literate citizens' or "a literate man." Literateness was an attribute of the individual. In the1880's the Oxford English Dictionary notes that the appearance of a new word: the abstract noun "literacy." Literacy was not used to describe a "learned" or "scholarly" person, but rather, it implied very basic reading and writing. Linguists Michaels and O'Connor suggest that the emergence of this word reflected a societal shift in policy and values that came with the industrialization of American cities. The expanding industrial economy relied on immigrant labor that lacked a shared language—a call for basic literacy sounded. How does the history of the word "literacy" relate to agricultural education?

Is not our profession's call for conversational literacy about agriculture for all students a shift in our policies and values? No longer do we talk exclusively about the "learned individual" enrolled in traditional high school vocational agriculture programs; we have expanded our vision to include the notion of basic literacy on a massive scale. An important lesson can also be learned from the past: literacy is a moving target! In the 1930's "functional literacy was equated with 3rd grade level schooling, by the 40's 4th grade, and by the 1950's a 6th grade level was deemed necessary (Graff, 1981). Today, literacy no longer simply means mechanical skills of reading and writing, but rather is re-conceptualized as reasoning or problem solving and the ability to engage in multiple discourses (Gee, 1989). This is a great departure from the early definition of literacy. The question becomes, where do we begin in our conceptualization of conversational literacy in agriculture, food, fiber, and natural resources systems literacy?

In this issue, I hope we might begin to answer three questions:

1) how we go about the task of defining conversational literacy,

2) what human and institutional resources are needed for the task, and

3) what are exemplary models for promoting literacy. To answer these questions, I've asked university and state staff leaders, industry partners, and innovative teaching practitioners to provide their insight.

In his article "And Your Next Assignment is…Conversational Literacy," Neil Knobloch argues that agricultural educators haven't agreed on the product (what people should be conversant about in regard to AFFNR systems). He suggests that the language necessary for a literate person to express his/her understanding have not yet been agreed upon. Knobloch believes that if the product (benchmarks, standards, language, and potential real world examples) are agreed upon, then the profession can work toward processes (educational interventions based on our experiential philosophical foundations) that help achieve the product, which is our agreed upon goal for conversational literacy.

In her article entitled "Partners for Agricultural Literacy," Jean Landeen argues that formal public schooling can have an impact on fostering conversational literacy but that additional support is needed. Ms. Landeen describes the California Department of Education's pioneering efforts to formally infuse agricultural literacy into the state's curriculum. She also discusses 1) the impact of having her state's Superintendent of Public Instruction call for "a garden in

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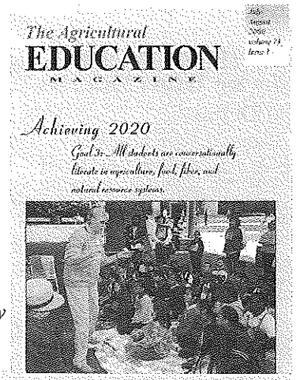
Theme: Achieving 2020:
Goal 3: All students are conversationally literate in agriculture, food, fiber, and natural resource systems.



(Cover Photo by Jean Landeen)

Editorial

Theme Articles:

Index

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Conversational Literacy: A Moving Target That Has Yet to Be Defined...
(continued from page 2)

every school," 2) partnerships with farmer and agricultural women organizations, and 3) how California's agricultural industry lobbied for AB 1645-The Agricultural Education Act of 1999. The legislation mandates the infusion of agricultural education into a broad range of academic subjects and the inclusion of a stronger basis for career preparation in agriculture. In other words, California may be the first state in the Nation to mandate formalized instruction about agriculture and they have accomplished this by marshalling the resources of formal education, industry, and agricultural organizations.

Following Landeen's article on partnerships is an article based on an industry perspective from the country's heartland entitled "Industry Promotion of Agricultural Awareness in Iowa." In her article, Kathryn Thompson, President of the Iowa Agricultural Awareness Coalition, a group composed primarily of commodity organizations, describes the current efforts of her group to promote AFFNR systems literacy. It's interesting to note that even in a rural farm state such as Iowa there is concern that consumers, and particularly youth, don't understand the agri-food system.

In their article entitled "Milk Comes from a Store, Of Course,"Jim Bailey and Jermone Hoban of the Orange County Fair's Centennial Farm describe a 10-year effort to stamp out agricultural illiteracy among suburbanites in southern California. Through free educational programs sponsored by the Fair, thousands of elementary children tour a working farm located on the fairgrounds. For

Transplants and a box of resources based on Capital Ag Day await teachers. (Photo by Jean Landeen)

most children, it is their first contact with many of the plants and animals that they have only heard about in storybooks. Bailey and Hoban underscore the fact that many of these urban children have never considered their connection with and reliance on the land.

In his article, Eldon Weber of Iowa State University's Department of Agricultural Education and Studies discusses a food that most children have a strong connection with, pizza. Weber describes the ISU Global Pizz-a-Thon and how the program uses a familiar context—pizza to link student learning to agriculture and agri-food system careers. The Pizz-a-Thon program is organized around teams of middle schoolers who design and market their ideal pizza. As the students learn about pizza, they also link back to the soil, water, and the plants and animals that provided the ingredients. The Pizz-a-Thon culminates with mock sales presentations of pizzas to restaurant and industry representatives who help sponsor the program.

This issue also features teaching practitioners who explain how they currently promote conversational literacy about AFFNR systems. Marcia Paterson of the Milton Hershey School in Pennsylvania writes about her school's efforts to infuse agricultural examples into a standards based curriculum focusing on core academic subjects. By infusing agricultural examples, like a 4th grade county fair in conjunction with literature such as E. B. White's Charlotte's Web, the Milton Hershey School has successfully helped non-agricultural teachers integrate agriculture into the curriculum. From Ms. Paterson's account, it appears that teachers and administrators were amazed by the success such a program had on the students.

In a similar fashion, in their article, "A Vision for K-12 Education In and About Agriculture and Natural Resources," Tom Hurst and Lyn Sperry describe Countryside Charter School's journey to establish a K-12 school based on the theme of agriculture and natural resources. In their article, they discuss the hardships teachers encountered because they lacked experience with teaching through agriculture and natural resource themes and outside the walls of their classrooms. Hurst and Sperry also share successes that came about as a result of combining the expertise of seasoned educators. Their major point is that young teachers graduating from our universities do not possess the ability to immediately teach about the AFFNR system and need assistance.

This issue also includes an article with the call by authors Hurst and Sperry for universities to step up efforts to prepare teachers to teach AFFNR systems literacy. Dr Cindy Haynes' article, "Preparing Undergraduates to Teach Youth about Horticulture through Service Learning," describes a new initiative at Iowa State University that engages undergraduates in service to their community, while at the same time promoting horticultural literacy among elementary teachers, their students, and community volunteers. To promote AFFNR system literacy at the university level, innovative programs such as those described by Dr. Haynes are warranted. These types of programs can impact large numbers of elementary students in urban and suburban areas—where our future agri-food system human capital will come.

If the agricultural education profession and its stakeholders are to foster AFFNR systems literacy, then we must look to the policies we establish and the values we hold as we define the depth and breadth of conversational literacy. It is important to note that it is through the use of language, most often through talk, that we link the cognitive with the social. It seems to me, as Knobloch has pointed out in this issue, that the language we expect a conversationally literate person to possess is essential to define, but we must also be aware that history tells us that our goals for literacy will change along the way. Once these goals are more clearly defined, we can be more focused in our efforts to foster agriculture, food, fiber, and natural resource system literacy.

Teachers and Community Organizers discover new instructional resources from FFA officers Andrew Copen and Neil Gibson. (photo by Jean Landeen)

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Gee, J. P. (1991). What is literacy? In C. Mitchell and K. Weiler (Eds.) Rewriting literacy: Culture and the discourse of the other. New York: Bergin and Garvey.

Graff, H. J. (1981). Literacy and social development in the West: A reader. Cambridge: Cambridge University Press.

Michaels, S. and O'Connor, M. C. (1990) Literacy as reasoning within multiple discourses. Council of Chief State School Officers Summer Institute.

Cary Trexler is Assistant Professor in Agricultural Education and Studies at Iowa State University at Ames, IA.

And Your Next Assignment is...Conversational Literacy

By Neil A. Knobloch

What is conversational literacy? Is conversational literacy dependent on the situational context a person is in and with whom he/she communicates? For example, are you conversationally literate about medicine, technology, or nuclear physics? Many people would be able to carry on a conversation with some regarding these topics, but most people would not profess to be conversationally literate until they know with whom they would be communicating. If agricultural educators expect all students to be conversationally literate, does it imply that all students should be able to carry on a conversation with an educated person about agriculture? Is this a realistic goal?

Another question to be addressed is: Why do most people need the breadth of knowledge necessary to converse about agriculture, food, fiber, and natural resources (AFFNR) systems? Typically, people have what Noble Prize laureate Herbert Simon called 'bounded rationality." In other words, they tend to limit what information enters into their consciousness in order to cope with the complexity around them. So, do we have a convincing argument as to why all students need agricultural knowledge to communicate?

After trying to conceptualize conversational literacy, asking several questions, and attempting to envision the objectives of this goal, I will address how leaders in agricultural education can provide direction for the profession, educational community, and stakeholders in developing a strategy to achieve the three objectives listed under goal three in "A New Era in Agriculture: Reinventing Agricultural Education for the Year 2020." First, to set a clear path to each conversational literacy, agricultural educators should reflect on the nature of our thinking processes. Typically, agricultural educators are "doers" based upon the "learn by doing" philosophy; we set out to solve problems. Although the study of agriculture in common schools dates back to the nature study movement about 100 years ago (Bricker, 1914, cited in Hillison, 1987; Snowden and Shoemake, 1973), there has been more attention given to conversational literacy in the last two decades in reaction to the need for students to know about agriculture. To solve this perceived problem, educational interventions have been implemented (Balschweid, Thompson, and Cole, 1998; Herren and Oakley, 1995; Trexler and Suvedi, 1998). However, lack of a clear goal may be the unsolved problem in regard to AFFNR system conversational literacy, because it has not been clearly defined or conceptualized by the agricultural education profession.

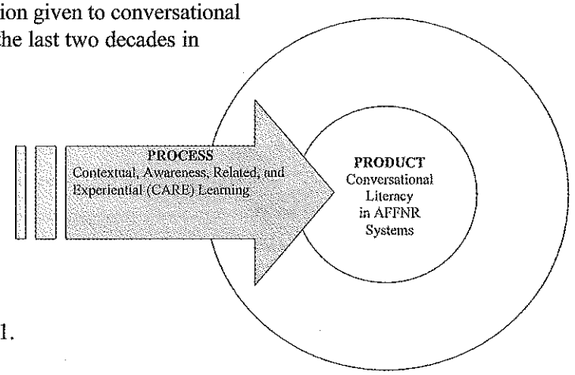

Figure 1.

The Assignment

As Joe Scatterscrew might say, "Well, we got some homework to do. What we need is some sound thinking." Cognitively, the homework assignment and learning activity is to clearly define and conceptualize the definition and rationale for being conversationally literate about agriculture. This assignment has four questions with a framework to think about conversational literacy as a product and a process (Figure 1). Let's consider the assignment.

Product Questions

To focus the product question of conversational literacy, a story about a hunter can be illustrative. A woman went deer hunting with a full quiver. When she returned, a friend asked her why she returned with a full quiver. She replied, "I needed a target." Similarly, before we can work towards a goal, the goal must be clearly defined. Agricultural educators would be wise to openly discuss and work towards consensus with stakeholders regarding the language that would operationalize the meaning of conversational literacy. Learning can be assessed by a person's ability to perform a skill. Therefore, if one were to measure conversational literacy of a student, the words and language communicated by the student would be the outcome on which to base judgment of conversational literacy. Therefore, there are two questions regarding the product component of this assignment that need to be discussed and answered: (1) What do people need to know to be conversationally literate about agriculture, food, fiber, and natural resources systems? and (2) What language do we use to describe that knowledge? The profession will not easily answer these questions. They will require much dialogue to construct a shared language necessary for conversational literacy.

Process Questions

Once the product goal has been clearly defined by answering the aforementioned questions, then the process of how to accomplish the process goal can be discussed. Related to the earlier analogy, now that the hunter has sighted the deer, she can determine the strategy to hit the target. In like manner, the process of conversational literacy would begin to take shape based on the blueprint conceptualized in the product phase. Now it is time to consider the next two questions: (3) Why should all students be conversationally literate in AFFNR systems? and (4) How should all students learn to become conversationally literate in AFFNR systems?

The Rationale

Agricultural educators can now return back to its nature of "learning by doing." This philosophy of agricultural education is the rationale to sell stakeholders on why agriculture teachers should collaborate with teachers in all disciplines, why teachers would integrate agriculture in their instruction, and why agricultural teachers would collaborate with other groups in the communicating about agriculture, food, fiber, and natural resources systems to all students. This rationale is strongly supported by the very nature and philosophical foundation of our profession. Dewey (1938) expounded, it is a sound educational principle that students should be introduced to scientific subject-matter and be initiated into its facts and laws through acquaintance with everyday social applications. Adherence to this method is not only the most direct avenue to understanding science itself as the pupils grow more mature, it is also the surest road to the understanding of the economic and industrial problems in present society. For they are the products of a large extent to the application of science in production and distribution of commodities and services, while the latter processes are the most important factor in determining the present relations of human beings and social groups to one another (p. 80).

If agricultural educators define where we are going, then the education profession and stakeholders can act accordingly to the strategy that will serve as the roadmap in guiding educators to achieve the goal of all students being conversationally literate in agriculture, food, fiber, and natural resources systems.

Who Will Do the Next Assignment?

The leadership in addressing this goal will need to come from the agricultural education profession (Figure 2). When agricultural educators provide the leadership and support for conversational literacy in AFFNR systems, agriculture teachers, educators in all disciplines, and stakeholder groups will see their role in collaborating on the three objectives identified by the Reinventing Agricultural Education for the Year 2020 Steering Committee. The responsibility of this goal rests on agricultural

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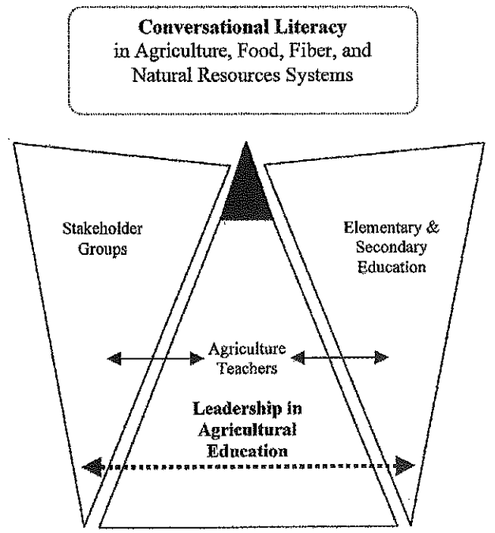


Figure 2. Leadership and Collaboration for Conversational Literacy

Partners for Agricultural Literacy

By Jean Landeen

"All students are conversationally literate in agriculture, food, fiber, and natural resources systems."

This is a challenging goal. What can be done, who will do it, where are the resources? Literacy in its self has been a challenge. Try as we might, the goal of universal literacy has not been accomplished even when significant effort has been directed towards it in the public school system. It would be unrealistic to think that the goal of all students being conversationally literate in agriculture, food, fiber, and natural resources systems could be achieved with just those involved in the formal education system.

To accomplish the goal we will need resources from the public school and beyond. This need not be frightening or daunting. In fact, if we look around we will see examples of significant partnerships developed to combine intellectual, financial, material, and human resources in support of all students achieving conversational literacy in agriculture, food, fiber, and natural resource systems. In this short article, I hope to highlight some exemplary partnerships that those concerned with conversational literacy about California agriculture have undertaken.

Agriculture Programs

The first most logical resource is the traditional agriculture program. Agricultural teachers now find themselves to be resources for colleagues providing magazines, materials, tools, references, and confidence to teachers building their own awareness of agriculture. Agriculture students are called upon to show and talk about their animals and their horticulture projects to classes of all grade levels. One example of students promoting literacy about agriculture is Farm Days. Farm Days are held on the high school, elementary, or junior college campus and tie in well to second, third, fourth, and fifth grade lessons in social science and science. For the middle grades, teams of agriculture students develop science lessons using agricultural examples. The wise agriculture teacher takes advantage of this opportunity to let incoming students know about the activities and opportunities of the agriculture program.

To continue fostering interest of prospective students, this year the California Agricultural Teachers Association encouraged agriculture teachers to correlate program outreach activities with the Superintendent of Public Instruction, Delaine Eastin's Initiative of "A Garden in Every School." During the winter workshops, ideas were exchanged on how to use school gardens as teaching resources for both elementary and high schools. Over 100 agriculture departments arranged for three hundred class sets of garden seeds. Many shared those seeds with elementary and middle school through the participation of their own FFA agriculture ambassadors working with the teachers of younger students.

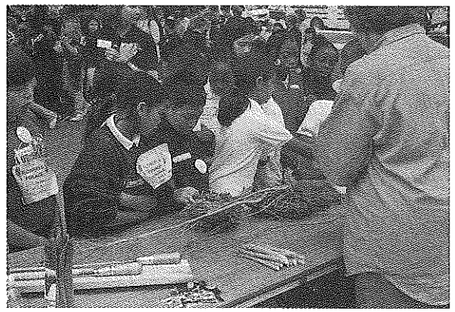
California Foundation for Agriculture in the Classroom

The United States Department of Agriculture supported "Agriculture in the Classroom" initiative was introduced in the early 80's. In California, the idea of talking about agriculture through the state's classrooms was recognized as a viable education effort by the California Farm Bureau Federation (CFBF). Through CFBF's initial sponsorship the California Foundation for Agriculture in the Classroom (CFAITC) was formed. The Foundation, with the guidance of its board of directors, coordinates and conducts professional development activities for teachers, conducts a statewide annual teacher/partners conference, and supplies school-based agriculture ambassadors with information to share with fellow teachers. It collects, reviews, and suggests instructional material, develops agriculturally based lessons, and encourages thinking and writing about agriculture through a statewide writing and art contest.

The California Foundation for Agriculture in the Classroom has called upon agricultural education and other consultants in the California Department of Education to use their expertise to guide the development of lessons and materials to be shared with schools. The county-based education committees recruit local FFA members and teachers to provide workshops in their Summer Agriculture Seminars for teachers. They include the high school agriculture programs on the resource list for elementary teachers. For the past 16 years State FFA Officers have participated in the statewide Summer Agriculture Institute for Teachers and Administrators. At the Annual AITC conference, agriculture teachers demonstrate active hands-on lessons. Regional FFA officers conduct workshops on team building, career opportunities, and activities FFA members can provide elementary classes. The young people capture the attention of the K-8 teachers demonstrating that high school students are valuable resources for their efforts to introduce agriculture in the classroom.

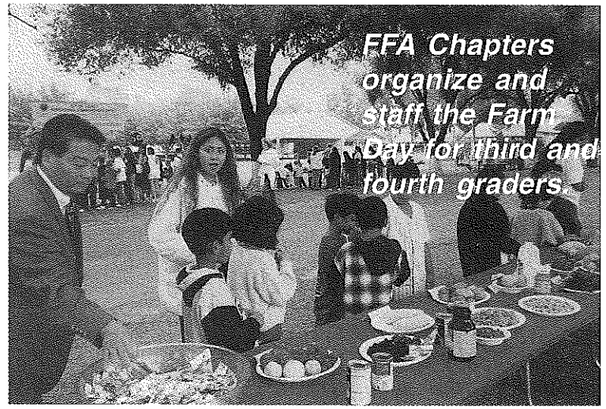
California Women for Agriculture

California Women for Agriculture (CWA) draw the attention of legislators to agriculture and children with Capitol Ag Day. Twelve mini-classes



Asparagus is interesting from the root to the table. (photo by J. Landeen)

are taught to third and fourth grade classes visiting the capitol. They involve high school programs in the area, students from the veterinary school, state FFA officers, and representatives of the main commodity groups. From every "class" the students take home an item whether it was a cotton boll, a plant they have transplanted, a vegetable they have just learned, or the memory of the texture of the calf and goat they have touched. Each teacher leaves with a box of materials to use in the classroom to reinforce the experiences on the Capitol lawn and to utilize the students' improving academic skills. In addition, local chapters of CWA raise scholarships for teachers to attend conference and contribute expertise to workshops.



Industry Organizations

Probably the strongest partners to reach our goal of all students being conversationally literate in agriculture are the organizations of agriculture. Over the past five years the Agriculture Focus Group and the Agricultural Network have worked with the California Department of Education to formally expand the scope of Agricultural Education in the Education Code. The passage of AB 1645, The Agricultural Education Act of 1999, called for the infusion of agricultural education into a broad range of academic subject areas as well as the inclusion of a stronger basis for career preparation in agriculture. The Education Code's clear inclusion of a comprehensive program in agriculture will facilitate school district's decisions to make conversational literacy in agriculture a part of the instruction for all children. And Californian's have the state's agriculture industry to thank for the forethought to push this bill through the legislature.

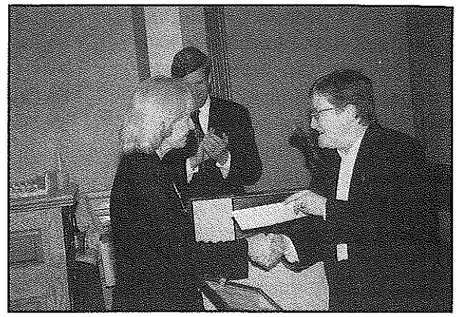
In Conclusion

The vision that all students are conversationally literate in agricultural systems has been evolving ever since agriculture allowed for the development of civilization. The renewed and strengthened interest is a realization that the facilitator of civilization will be threatened without the knowledgeable attention of people. As Michael Crieghton suggested in Timeline, "If you don't know history, you don't know anything. You're a leaf that doesn't know its part of a tree." Likewise in regard to agriculture, without knowing and respecting the basis of civilization we will not know we are a part of civilization.

Jean Landeen is Regional Supervisor and State Coordinator of Agricultural Literacy and Awareness in the Agricultural Education Unit at California Department of Education, Sacramento, CA.

Industry Promotion of Agricultural Awareness in Iowa

By Kathryn Thompson



Peggy Hensen, an Iowa elementary school teacher receives a stipend for agriculturally related teaching materials.

Did you know that in the state of Iowa, agriculture is the second largest employment sector in the state, second only to retail? One of every eight Iowans works directly in agriculture and 2 of every 9 Iowans in ag-related jobs. That's nearly 446,000 Iowa workers directly linked to agriculture. Indirectly, agriculture effects a much greater portion of Iowa's population. Today, Iowa farmers produce more corn, soybeans, and hogs than any other state. Beef cattle, milk, turkey, and egg production are also abundant in Iowa. California leads the nation in the export of ag products, where the state of Iowa, which is much smaller geographically, ranks a close second.

With this in mind, one would think that most, if not all, Iowans would know where milk comes from. One would think that most Iowans would know that hamburger comes from beef cattle. Contrarily, there are many young children that would not respond with the correct answer. Many might say that milk comes from a plastic jug at the store and that "ham"burger comes from a hog. In addition, few would consider the vast number of occupations involved in getting food to the table or hide processed for retail. It's imperative that stakeholders in the ag industry see that our young children are provided agriculture education in the classroom, thus the organization of the Coalition for Agriculture Image Promotion (CAIP), known today as Iowa Agriculture Awareness Coalition (IAAC).

Iowa elementary school teacher, Jan Price, receives an award from Iowa Governor Vilsack and Secretary of Agriculture Patti Judge. The award was sponsored by the Iowa Agricultural Coalition.

Established in 1992 as the "Coalition for Agriculture Image Promotion," the IAAC is an alliance of public and private organizations and individuals who work together to increase agricultural literacy among Iowa school children grades K-12. Our members include commodity organizations, agriculture educators, and public institutions interested in increasing Iowans' understanding of the importance of agriculture to our economy and our everyday life. The IAAC mission statement is, "To increase youth awareness of the importance of agriculture (food, fiber, and environmental systems) and the benefits throughout an individual's life." As the IAAC moves to bridge the gap between agriculture education and the classroom, we have identified three goals:

1. Developing and promoting educational activities that foster awareness of agriculture for school-age youth.
2. Uniting to increase the impact of member organizations' educational goals.
3. Developing partnerships to sustain IAAC activities.

Through the years, IAAC has successfully implemented agriculture education activities, reaching Iowa educators and school children. Highlights of various programs are listed on the next page.

IAAC Programs

✡ Creation of a set of colorful posters offering agriculture related lessons for Iowa's kindergarten through sixth grade students sent to more than 14,000 Iowa educators. The food, fiber, and environmental systems education project offers Iowa youth educators age-appropriate lessons, take-home activities, and resources for K-6 students.

✡ Development of a curriculum kit called the imAGination Station® that was distributed to media centers in Iowa schools.

✡ Hosting of the Teachers Academy for Ag Awareness in a joint project with the Department of Agricultural Education and Studies at Iowa State University. Workshops are conducted annually at the Iowa Beef Cattle Industry Center, where teachers receive an intensive two and one-half day immersion in agriculture and learn how it can be integrated into their curriculum.

✡ Creation of the IAAC World Wide Web site (http://www.agaware.iastate.edu) that offers up-to-date teaching resources, links to other agricultural resources cites and information about educators. The IAAC's curriculum resources and newsletters are also available at the click of a button.

✡ Publishing of *Gleanings,* the IAAC's newsletter that offers ideas on new books, reviews web sites and announces opportunities for teachers interested in infusing agriculture into their classrooms. The newsletter is free and available upon request.

✡ Sponsorship of the annual IAAC Teachers' Recognition Award that recognizes teachers who are doing an outstanding job of creating agriculture awareness in their classrooms. A stipend to purchase classroom materials is awarded and statewide recognition is given. In recent years Iowa's Governor and Secretary of Agriculture have presented the awards.

In addition to these program highlights, the IAAC annually supports workshops, displays, and other events, which increase the ag literacy of Iowa's future leaders – its students!

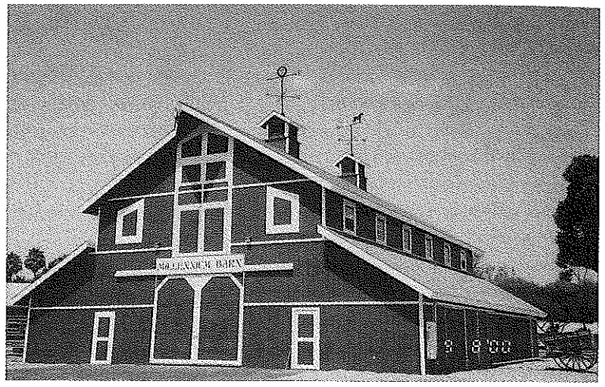
IAAC's plan for the future is to continue supporting our existing education projects and to embark on new projects. Living in Iowa, it's essential that we take a look at agriculture education in the classroom. This year the IAAC will focus on the future. We will actively work to maintain the valuable input we have from committee members and broaden group participation to all four corners of our great state by including as many stakeholders as possible! As we embark on new projects, we will look to Iowa teachers for their insightful knowledge. We will continue our efforts to inform college and university elementary education students about the many agriculture education resources available to them and the important role they have in teaching agriculture in the classroom. We welcome individuals who believe in the IAAC mission and hope to involve such people in project development and implementation for the betterment of our state. Iowa helps to feed the world and our state economy depends on the future of agriculture in Iowa – it depends on how we educate our children!

For more information or to inquire about IAAC membership, contact Iowa Agriculture Awareness Coalition via e-mail to agaware@hotmail.com or by calling Carol Davis at 515-225-5425.

Kathryn Thompson is Iowa Agriculture Awareness Coalition President and Midwest Dairy Association, Nutrition Program Manager in Ankey, IA.

Milk Comes From a Store Of Course

By Jim W. Bailey and Jerome Hoban



When asked, "Where does milk come from?" a typical 5th grader in urban Orange County California says, "From the store, of course." In this urban metropolis (population 2,800,000) children, youth, and even many adults lack the opportunity to interact with agriculture. Commercial buildings, strip malls, and houses have replaced Orange County farms. The only exposure to agriculture these urbanites might have would be through a book, movie, story told by an older friend, trip out of Orange County, or a visit to Orange County Fair's Centennial Farm.

Over 53,000 students registered their visit to Centennial Farm during the 1998-1999 school year and another approximately 650,000 children, youth, and adults visited the farm during that same year. During their visit, they saw cows giving milk, chicks hatching, sheep shearing, and how soil, seed, sunlight, and water work harmoniously to germinate and grow plants. Because of their visit to this real life farm, students learned new vocabulary, gained knowledge, and could carry on the beginning of a conversation about agriculture, food, fiber, and natural resource systems.

The mission of California's 32nd District Agricultural Association, better known as the Orange County Fair, is to promote agriculture through education. This is a challenge, but crucial in Orange County because not much farming exists anymore and education about agriculture is limited. Ten years ago, Fair staff had a vision of a miniature year-round farm right on the fairgrounds that would educate as many people as possible. Thus Centennial Farm was born.

Today the farm has expanded from a postage stamp example to four acres of vegetable and flower crops with a half-acre dedicated to farm animals. The farm is open to the public seven days a week (1:00-4:00 weekdays, 9-4 weekends). Walk-ons average about 100 per day each week. Guided tours, led by volunteer docents, are scheduled each weekday morning for schools, one at 9:00, and the other at 11:00. Each tour lasts approximately an hour and a half. Guided tours average from 360-400 students each morning. The focus of each tour is to teach the group where food and fiber comes from, how it is raised or grown, and how the crops and animals are used as an agricultural commodity. As a result, the Fair hopes that, the children realize how agriculture affects their daily lives.

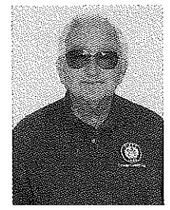
On any given day, school children and the general public, at no cost, can see, touch, and smell a general farm producing agricultural products. The list of experiences a child has is endless. For example, they can touch a pig, milk a cow, hold baby chicks, observe working oxen, hear donkeys "bray," and plant radish seeds to take back to school. This is unique, as few have ever experienced a farm or livestock before. Their faces light up watching calves being bottle fed, seeing how compost is made (and smells), and observing bees make honey. Most every child visiting the farm is doing this for the very first time. When students leave the farm, they have taken a vast array of things to talk about. "Mom, guess what I did today? I milked a cow!" Or, "Today, I saw a baby chick being born. It hatched from an egg, which was in an incubator, and it had been in there 21 days. Isn't that amazing?"

Because of Orange County's temperate climate, there are over 40 crops growing year-round: apples, bananas, peanuts, carrots, beans, cotton, alfalfa, sugar cane, and the list goes on and on. In addition to all the crops, students and visitors get to see farm animals including: pigs, goats, dairy cows, sheep, chickens, oxen, buffalo, turkeys, ducks, rabbits, peacocks, peahens and chicks, horses, donkeys, beef cows, calves, and exotic game birds.

In addition to tours of the farm, each class receives educational posters for their classroom. Teachers are given lesson plan materials which have been developed by California's Division of Fairs and Expositions education committee, the California Farm Bureau Federation's Agriculture in the Classroom program, and the California Department of Food and Agriculture. Student learning is maximized when classroom teachers teach hands-on experiences at a real life farm. In addition, to following up on these experiences, lessons are also provided to use at school after the visit.

Interestingly, or maybe predictably, the Farm is becoming Orange County's agricultural education center. It receives support from the Farm Bureau and local farmers as well as the community. The Farm has also become a popular home for activities and meetings of many organizations including the Orange County Beekeepers, Orange County Rare Fruit Growers, Organic Gardeners, Master Gardeners, 4-H, FFA, and the Centennial Farm Foundation. The Farm Foundation has sponsored an annual fund-raiser, raising thousands of dollars to finance a new "Millennium Barn," which broke ground in March and is scheduled to be dedicated in July 2000.

During the annual 17 day Orange County Fair, the Farm becomes a main attraction. A recent survey revealed that 78% of Fair patrons visited the Centennial Farm. Of the nearly 800,000 visitors to the Fair, approximately 600,000 took some time to see agriculture in action at the Farm. The impact of this agricultural literacy program then expands beyond contact with elementary children though tours. In a year's time, it is estimated some 700,000 people enjoy crops and animals at the Farm. If each visitor leaves with new information relating to food and fiber production, and shares it in conversation with someone, then we have contributed significantly to improving agricultural literacy.



Jim W. Bailey is Centennial Farm Manager, Fullerton, CA.

Jerome Hoban is Administrative Assistant at Orange County Fair and Exposition Center, Fullerton, CA.

And Your Next Assignment is...Conversational Literacy...

(continued from page 7)

educators. If agricultural educators believe in conversational literacy in agriculture, food, fiber, and natural resources systems, then collaboration efforts with agriculture teachers, educators, and stakeholders will share in the common mission of improving the educational process with contextual, awareness, related, and experiential learning for all learners. The product of the collaborative labors will be students who communicate a language related to the context that they experienced and awareness of agriculture, food, fiber, and natural resources systems.

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Connecting Standards Driven Units of Instruction to Agriculture

By Marcia Paterson

In the ideal world of education, students will know how agriculture fits into the big picture. It's not an ideal world, and we in agricultural education have to lead the effort and supply the tools to integrate ag-ed with the core curriculum.

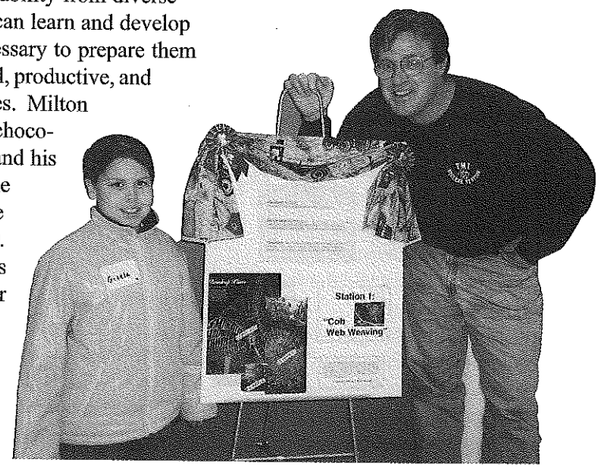
We would all like to see a student body that inherently understands and appreciates the vital contribution of agriculture to the well being and consistent renewal of global, state, and personal resources. We would like to see students assimilate this knowledge through a transparent and seamless interface between agricultural and standard education.

At Milton Hershey School, we have taken up the challenge to develop some of these tools and create a transparent interface. The Agricultural and Environmental Education Program is creating a platform of agriculturally based education tools that catalyze and facilitate cross-curricular course development. We use agricultural education as an educational, fun, and entertaining route to agricultural literacy through its exposition in core subjects such as English, Language Arts, Mathematics, Science, and Social Studies.

Milton Hershey School located in Hershey, Pennsylvania is a K-12 private residential school offering education, housing, and other basic needs to disadvantaged children. The School offers a secure, nurturing environment in which children of character and ability from diverse backgrounds can learn and develop the skills necessary to prepare them for meaningful, productive, and successful lives. Milton Hershey, the chocolate magnate and his wife, Catherine established the school in 1909. The school has graduated over 5,500 students and currently has a population of 1,000.

In his characteristic entrepreneurial style Milton Hershey had the foresight to purchase 10,000 acres of Central Pennsylvania dairy farmland which produced milk for the chocolate factory. This land is now a legacy and still remains a part of the School. The Agricultural and Environmental Education (AEE) Program manages 500+ acres for educational support. Remaining farmland not utilized directly for School purposes is rented to local farmers for production agriculture.

To link what students learn in the classroom and show that knowledge applies to the world, the AEE Program provides hands-on learning opportunities and experiences. Teachers, houseparents, and staff work together to plan practical experiences and living examples of classroom principles. There are four main AEE facilities: Environmental, Horticultural, Animal and Dairy, and Foods Processing.



There are dozens of projects taking place at each center throughout the school year and summer. One project in particular is focused on the classic literature book, Charlotte's Web by E.B.White. Charlotte's Web is an often-read piece of children's fiction, which is standard issue for fourth grade Language Arts. Building on the fourth grader familiarity with the book, we developed a Charlotte's Web project/program. We worked in collaboration with teachers to identify the standards and benchmarks that would be met by developing a project based on the book. Charlotte's Web at Milton Hershey School is associated with county fair come to life. This fourth grade County Fair now integrates English/Language Arts, Science, Social Studies, Art, Health and Mathematics, with Agriculture.

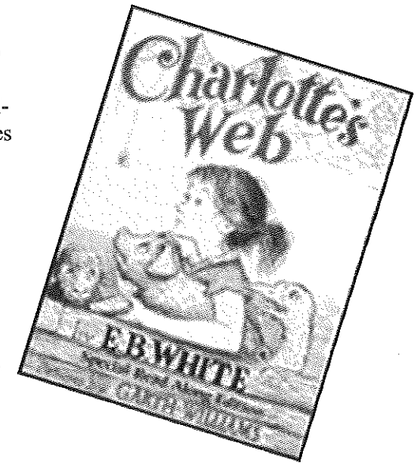


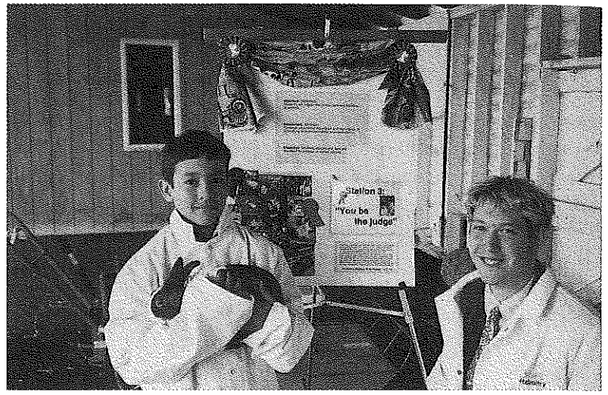
Table 1.1 shows the benchmarks addressed for Charlotte's Web *through specific hands-on activities and the appropriate assessment that each child is to meet.*

Table 1.1 Applied Student Activities for each Station
Each station is identified by a Standard, Benchmark, Activity and Assessment

Station	Benchmarks	Activities	Assessments
1 Web Weaving	Art / Science	Making a spider web	Identify spider anatomy and design elements
2 Guess-timation	Math	Guess an animal's weight	Predictions / accurate measurement
3 Fair Judging	Agriculture	Learn how to judge rabbits	Judging rabbits with reasons
4 Tractor Pull	Math	Pedal tractor pull	Demonstrate understanding of mass, effort and friction
5 Giddy'ap	Math	Pony rides	Calculate horse gaits
6 Pitch a Bale	Math / Agriculture	Straw toss	Measure distance and understand machinery used for making hay
7 Native American Foods	History / Science	Making popcorn	Analyze the change in matter
8 Botany	Science	Plant anatomy	Identify plant parts
9 Ice Cream	Science / Health	Ice cream eating contest	Experience "fair food" related to good nutrition
10 Reflection	Language Arts	Description of days' activities	Writing rubric / compare and contrast
11 Lunch	Health	Balance menu items	Analyze components for balanced nutrition
12 Animal Resource Center	Agriculture	Identify animal species	Demonstrate an understanding of animal life on the farm

All the adults involved in developing the activity schedule also read the book. The three brainstorming sessions that led to the activity outline proved to be an enjoyable, creative, and team-building exercise for the participants. They clearly relished the opportunity to work in a group with diverse educational interests.

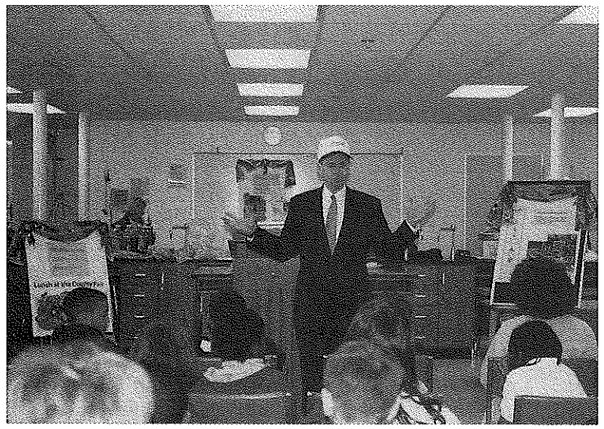
The adult enthusiasm that helped create the program was reflected in its acceptance by the students. The students enjoyed all the activities and they worked in groups of three. At each station, the group was assessed against the benchmark. For example, in the spider web making activity, students identified the body parts of a spider and spin/create a spider web on a 10' x 10' frame. This proved to be an excellent activity for demonstrating the advantages of teamwork, cooperation, and learning the scientific principles underlying the manufacture of a spider web. As you know, in the book, Wilbur the pig and Charlotte the spider often discuss the process of web weaving and the utility of the web in catching food. After successfully answering questions at each station, the team was awarded a puzzle piece. The nine pieces together created a picture of Wilbur, the pig. The very next day, the students also wrote a reflection on their days' activities. The average composition by the fourth graders was four pages! The teachers and principal were absolutely amazed at the level of comprehension and learning that took place at the fair.



Agricultural and Environmental Education Assistant Todd Biddle and Christian Gonzalez discuss rabbitry at the "Charlotte's Web County Fair."

Farm life at the Zuckerman's is constant theme throughout the book and County Fairs are an integral part of the farm year. Basing student activities around the theme of a county fair brings the book to life. We were fortunate enough to have The Honorable Sam Hayes, Pennsylvania Secretary of Agriculture, drop by to open the fair!

By linking agriculture with core curriculum, all subjects have the potential to come alive in a special way. All subjects are enriched by their complimentarity. Students learn through experiential learning that many subjects, including agriculture, are inter-related and share a common base of knowledge. Teachers learn that agricultural information in the classroom can enrich the content of the core subject. Ultimately, agriculturally related activities lined to core academic standards can help promote conversational literacy in both students and their teachers.

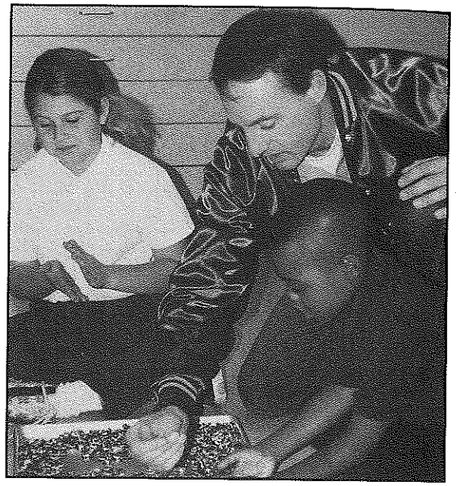


Sam Hayes is shown here explaining the value of Pennsylvania agriculture to fourth graders during the "Charlottes Web County Fair."

Marcia Paterson is the Director of the Agricultural and Environmental Education Program at Milton Hershey School, Hershey, PA.

A Vision For K-12 Education in and About Agriculture and Natural Resources

By Tom Hurst and Lyn Sperry



If we are to address the goal of all students being conversationally literate in agriculture, it would seem that the way to do it is to address all students. Agricultural education is primarily a program of secondary and post secondary institutions. By the time most students enter high school their vision is somewhat set on the path they and their parents have chosen. It would seem that the optimal place to address the literacy goal is at the elementary level. The elementary level is the ideal time to expose students to agriculture and natural resources through the use of literature and hands-on science and historical examples. Think of some of the classics of American children's literature such as the Little House in the Big Woods and Charlotte's Web, how many young children's books deal with animals, nature, and gardening? Agriculture education at the elementary level is not only possible but also desirable. From our experience at Countryside Charter School, students, and parents welcome the concept.

Countryside is a grassroots initiated public school academy in Michigan. The school was formed by a group of dedicated farm families and agriculturists to address several needs. These visionary leaders recognized the shortage of agricultural professionals and were not content with the general non-connected education being provided at local public and parochial schools.

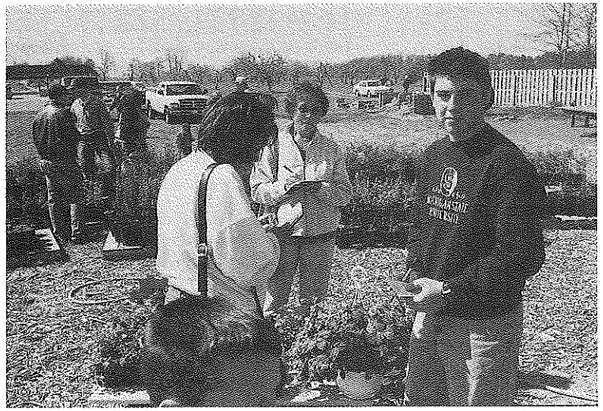
Countryside's design provides a well-rounded education by utilizing agriculture, natural resources, and rural heritage as a context for project based agricultural examples and projects are used to develop a thematic approach to learning.

Countryside is growing and expanding. Currently there are 470 students in grades K-11 for September of 2000. Students are a diverse mix of 30% African American, 10% Hispanic, and 60% European American and others. At most, 15% of the students live on full time farms; the other students come from the suburbs and the city of Benton Harbor, Michigan. Along with the permanent residents, there is a significant migrant student population from April-November.

There are many challenges to creating a school of this type. The very idea of a charter school is an area of great misunderstanding among educators, the public, and industry groups. Students do not pay to attend the school, special education students are welcome, USDA free and reduced lunch is available, students participate in state and national standardized testing, and teachers must be fully certified. Countryside is a Michigan public school pure and simple. The only difference is that we do not have a geographic land base against which to levy taxes and collect revenue. As in all Michigan schools we receive a fixed dollar amount per student from the state education department to operate the school. All operations are funded through this allocation. In addition, start-up grants for development were available through the state for the first two years. Other grants for technology, reading programs, and career education is regularly sought to fund innovation.

As can be imagined, our start-up challenges were many. In addressing the agricultural theme of the school; however, the main concern was, and remains, our teachers. As we all know there is a shortage of agriscience teachers and this shortage is even greater at the elementary level. Elementary educators are well versed in the areas of language arts, mathematics, and general subject areas but most lack the hands-on experiences through which to apply learning to real-world contexts. In hiring teachers, we seek an agriculture or natural resources background, but only a few candidates possess an understanding beyond the most basic level. In many cases we have to overcome the same anti agribusiness paradigms all of us have faced with teaching staffs at the secondary level.

At Countryside, as at all schools, new teachers struggle with class control and organization when they begin. In addition, however, at Countryside we ask teachers to infuse agriculture and natural resource examples and themes. As one can well imagine, most teachers are overwhelmed and hesitant to try activities outside their classroom walls. Our experience has been that staff members are open to training and new ideas that help them overcome their hesitation to use agricultural and natural resource activities and examples as a context for instruction, but the time and resources for in-service are extremely difficult to manage. Just getting a new school operating for the first two years is a very time consuming endeavor, but when adding a theme based curriculum the task is at times almost overwhelming.



Gardens, field crops, greenhouses and wildlife areas have been developed and integrated into instruction.

The school's original curriculum development plan called for teachers to develop curriculum revolving around agriculture and natural resources as they prepared lessons for the year. In the crush of being new teachers with little support, most teachers quickly fell back to typical instructional methods and "canned" instructional materials. It became obvious that if an agriculturally based school was to work, special efforts to support the staff were required.

A full time agriculture and natural resources coordinator was hired the second year with a broad background in agricultural education and innovative programs. Curriculum development grants were sought and secured to give teachers time to job shadow professionals in agriculture fields, tour local agribusinesses, and integrate existing agriculture resources into the curriculum. Literature that fit the school themes was analyzed and incorporated into the curriculum. With agriculturists on staff, gardens, field crops, greenhouses, and wildlife areas have been developed and integrated into instruction. Nature trails and aquatic areas on the site have been made accessible and a food science lab is available for student and staff use.

By the third school year the general education program was functioning well. New permanent buildings had been constructed and were a vast improvement over the original portable classroom structures. Student numbers rose from 160 to 380. Most staff openings had many qualified applicants as the program and building improvements continued. Teachers came from a broader background to include seasoned public school teachers and some with agriculture backgrounds. Administrators with visions to match that of the founders were in place. The state core curriculum model was adopted and implemented as a backbone for curriculum development efforts. Now as we start our fourth school year we are ready to fully implement the founders' vision of all students being conversationally literate in agriculture, food, fiber, and natural resources.

Currently we are developing a series of grade level thematic activities in agriculture to support the core curriculum. As students advance toward high school and education in agriculture, they will have been well exposed to education through agriculture.

An example of our vision to help students become conversationally literate is exemplified by our molasses theme. The theme provided students with a context for learning about the science and social studies aspects of agriculture. In addition, it allowed for students to learn through direct experience. The use of this type of thematic instruction required the efforts of many people from outside CCS. The process started as students harvested sorghum and pressed the cane using an ox-powered press at Tillers International located in Kalamazoo, Michigan. Some seed was saved for the next year's planting, while the cane syrup was boiled down into molasses. The student then used the product to make cookies, bread, and cakes. The product was sold at school as a bake sale.

(continued on page 23)

Preparing Undergraduates to Teach Youth about Horticulture Through Service Learning

By Cindy Haynes

In their article entitled: A Vision For K-12 Education In And About Agriculture And Natural Resources (this issue, page 18) agricultural education practitioners Tom Hurst and Lyn Sperry identified a gap in the preparation of educators to address agriculture, food, fiber, and natural resource systems literacy. At Iowa State University, we are in the process of implementing a program that will improve our undergraduate teaching, while at the same time help fill the aforementioned gap. We believe that for many urban people, public gardens are our "best bet" for developing conversational literacy about agriculture, food, fiber, and natural resource systems.

Project Description

In July of this year, Iowa State University's Department's of Agricultural Education and Studies (AGEDS) and Horticulture (HORT) were awarded two grants to create a program entitled "Undergraduate Service Learning at Reiman Garden's through Horticulture" (US-LaRGH). This project is innovative in three different areas. First, US-LaRGH combines instruction in basic horticulture with theories of learning in an agricultural context. The use of Reiman Gardens, a community garden that hosts thousands of visitors each year, as a site for instruction is novel. This course should interest students majoring in agricultural education and studies, horticulture, and elementary education. Future teachers enrolled in AGEDS will fulfill their horticulture requirement, while at the same time learning to develop educational materials and teach others in non-formal settings. For HORT students with an interest in communication, public garden management, teaching, or outreach, these classes fill a need in teaching/learning theory. And for future elementary educators, the course will provide background and experiences needed to teach youth about horticulture. These courses, then, will merge often-isolated disciplines into an authentic learning experience for students interested in education about teaching agriculture.

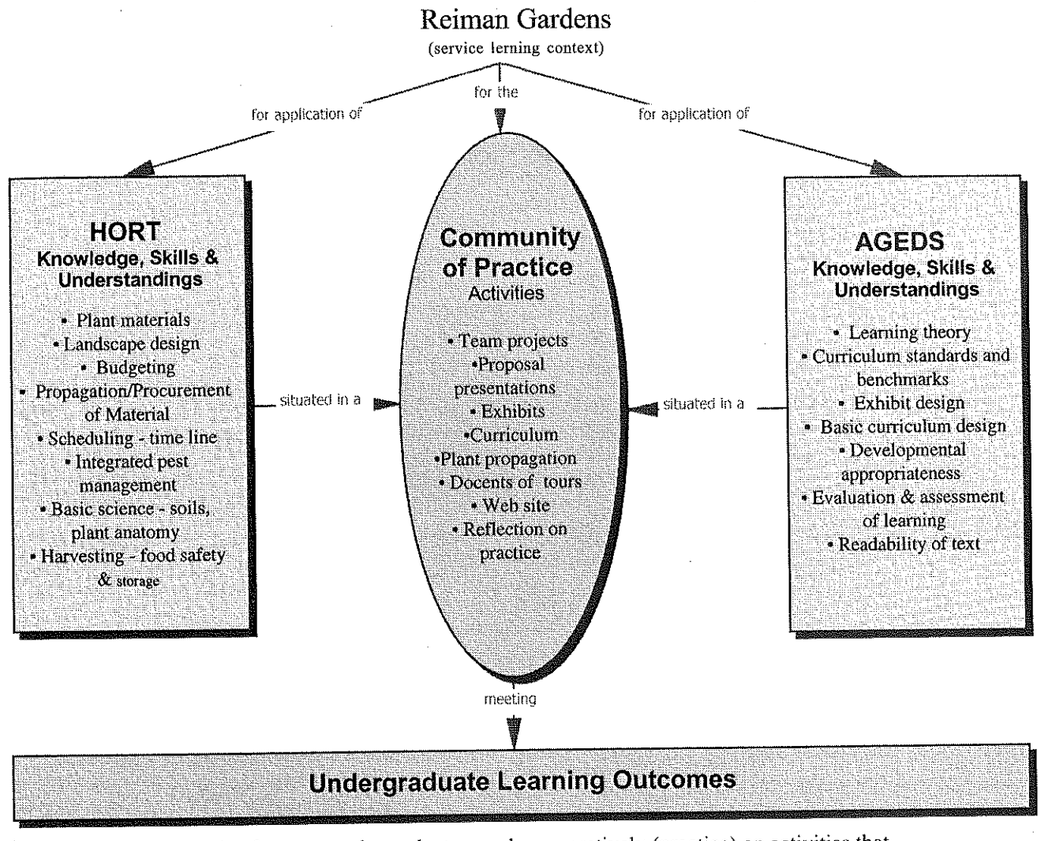
The second innovative aspect of US-LaRGH is its focus on promoting agricultural literacy. Since the late 1980s, colleges of agriculture have sought ways to promote education about the agri-food system. Increasingly, horticulture departments have established gardens to help urban and suburban dwellers understand the importance of plants. This project is unique because it outlines a mechanism for undergraduates to learn while helping others foster an appreciation for food, agriculture, and the environment.

The project's final innovative component is the infusion of technology for instructional purposes and for dissemination of undergraduate developed educational materials to teachers and the community. WebCT will be used as a platform to organize the teacher led portion of courses. It is a course management tool, developed by the University of British Columbia, facilitating WWW delivery. Teacher developed educational materials, lecture notes, and protoypes of products for elementary student lessons will be placed on the web. In addition, students will support each other's learning and discuss issues related to the educational materials that they develop. Exemplary elementary materials will be posted by the undergraduate teams on the Reiman Gardens web-site. This web-enabled access will allow learners to extend their learning beyond their experiences at the garden.

Products and Results

US-LaRGH is based on the theory of situated learning. The theory of situated learning suggests that learning is positively impacted when it is situated in a community of practice where learners are engaged in meaningful tasks. One can compare this to an apprenticeship model for learning. In this case, courses, centered on a service learning project would situate undergraduate learning in a "community of practice" (Lave and Wenger, 1991) as they develop educational materials and guide visitors to Reiman's Children's Garden. As Figure 1 illustrates, the Children's Garden becomes the locale where students apply their knowledge about horticulture and learning theory. The project creates a community of practice in which approximately 100+ undergraduate students learn to teach basic horticultural concepts by helping thousands of children, elementary teachers, and volunteers learn about the science and social science of horticulture.

Figure 1. US-LaRGH: A Mode for Situated Learning in a Community of Practice



[1] A community of practice forms as undergraduates work cooperatively (practice) on activities that prepared educational materials and garden exhibits for elementary school children who visit Reiman Gardens. The Gardens and the service learning project become the context in which undergraduate learning is situated. Undergraduates engage in active learning in a real-world context that leads to the attainment of learning outcomes.

Teams of undergraduates will be in charge of garden plots (educational exhibits) located in the Children's Garden. Working in teams, the undergraduates will:

1) research and compile horticulture and science-based educational materials previously developed,

2) design landscape plans for the plots with LandCAD,

3) develop lessons that prepare children for visiting the garden, guide them through a visit, and reinforce the childrens' learning when they return to the classroom,

4) present their plans to their teachers and classmates for critique,

5) propagate plants in greenhouses or order plant materials, and

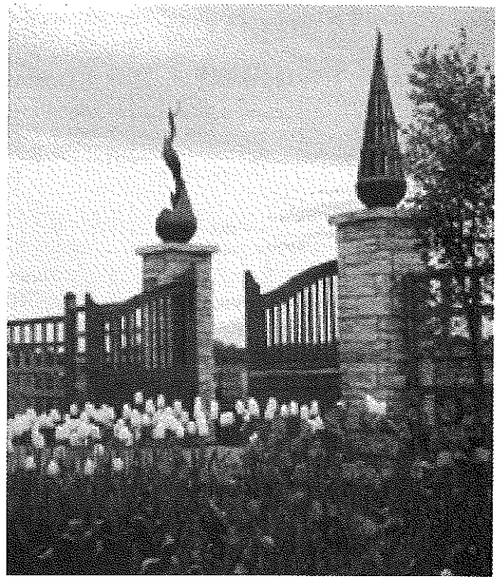
6) set up exhibits.

A community of practice forms as undergraduates work cooperatively (practice) on activities that prepared educational materials and garden exhibits for elementary school children who visit Reiman Gardens. The Gardens and the service learning project become the context in which undergraduate learning is situated. Undergraduates engage in active learning in a real-world context that leads to the attainment of learning outcomes.

Probably the most unique component of the proposed courses will be the linking of undergraduates

(continued form page 20)

directly with visitors and volunteers at the Children's Garden. Specifically, participation in laboratory sections of the courses will allow undergraduates to serve as docents for garden visitors. As undergraduates guide children through the exhibits, they will experience the fruits of their labor. To further extend the impact of these efforts, undergraduates will help volunteers learn about the educational exhibits. By empowering volunteers with similar understandings as those constructed by undergraduates, they can help children learn the science and social science of horticulture. The learning process will conclude as students share their work by selecting (in consultation with the instructors) the most effective educational exhibits, posting supporting materials on the Reiman Gardens web-site, authoring newsletters for teachers and volunteers, and by presenting what they learned in brown bag sessions at Reiman Gardens and in seminars for AGEDS and HORT students and faculty.



Reiman Gardens Iowa State University

Hopes for the Future

Although the project is just now beginning, we hope we can help serve others by: 1) designing a prototype for service-learning within undergraduate teaching and learning and 2) providing an example of how undergraduates can do their part to promote agriculture, food, fiber, and natural resource system conversational literacy within the community. Ultimately, we hope to make progress toward meeting the concern of articulated in Agriculture and the Undergraduate, (Board on Agriculture, 1992): all of us [college of agriculture faculty] must be concerned about scientific and technological illiteracy in our society, and we must be involved in correcting the situation by better preparing the citizenry—policymakers and voters—through undergraduate education and ongoing communication of science to the public.

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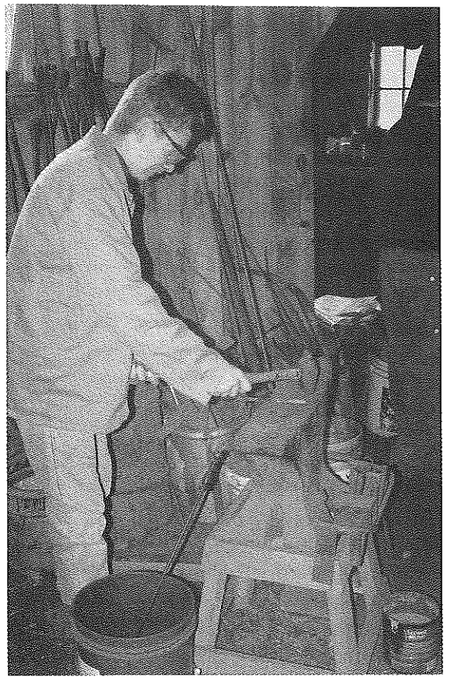
A Vision For K-12 Education In and About Agriculture and Natural Resources...

(continued from page 19)

To provide a link between the experiences and core academic subjects required skills that are seldom taught to new teachers. Experiences with molasses and oxen were linked to language arts by infusing children's literature, such as the book entitled Ox Cart Man and an article called The Great Molasses Flood. Mathematics and science concepts were well supported in the cooking and boiling process as well as time and cost of manufacture were calculated. Social studies concepts were addressed through the exploration of the use of animal power, an examination of local sugar production in Michigan, and a comparison of appropriate technologies for agricultural production. Even geography was included as the areas of sugar production and the historical impacts of the molasses and alcohol production along the east coast of the United States and Caribbean were studied. What started as an activity (making molasses) ended up being a full unit. The success of this unit and all others came down to the teacher in the classroom. A creative and experienced teacher who may not have known about molasses but knew how to teach insured the success of this effort.

Additional themes have varied considerably. Draft animals, blacksmithing, Native American gardening, and food preservation activities have all supported our rural heritage and agriculture themes well. Themes that have a more contemporary basis have included horticulture activities in the greenhouses; irrigation technologies, variety trials and marketing of produced crops. Food activities are common throughout the elementary and middle school grades. In the Countryside High School, FFA is the student council as well as the entrepreneurial engine of most activities.



Shaping steel at a blacksmith's anvil was part of the Rural Heritage Participation Day.

As practitioners in the field, we find that too few elementary teachers have the requisite understandings of agriculture and natural resources, skills with curriculum development and integration, and confidence to create the experientially based curriculum needed to promote conversational literacy about agriculture, food, fiber, and natural resource systems. Although there is much rhetoric on the part of agricultural education leaders about the importance of addressing AFFNR literacy, it appears, from our experience at Countryside, that there is a missing link in the preparation of elementary teachers in their university programs. Helping all students become conversationally literate will be an arduous task unless steps are taken to prepare future teachers with the requisite skills and experiences necessary for them to teach about agriculture, food, fiber, and natural resource systems as a context for learning.

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Pizz-A-Thon: Recipe for Consumer Education *Excitement Engagement Experience*

By Eldon Weber

The future of agriculture is in the hands of educators and consumers. It is imperative that agricultural educators develop creative educational models that will attract the broad segment of teachers and decision makers if we are to be successful in making a positive impact on global well being. Agricultural educators are at a crossroad of impacting the needed cross-disciplinary educational approach. To design a preferred future for the agri-food systems industry, the perception of agriculture and its relationship to our natural resources must change. In fact, we are in a fantasy world if we continue on our present course of agricultural education and think it will lead us to the new vision articulated in the Reinventing Agricultural Education for the Year 2020 initiative (National Council of Agricultural Education, 1999). This vision calls for a world where all people value and understand the vital role of agriculture, food, fiber, and natural resources systems in advancing personal and global well being.

In a focus group study of 6th, 7th, and 8th graders, Holz-Clause and Jost (1993) found that Iowa urban and rural youth held perceptions similar to the majority of our youth across the U.S. They equated agriculture with farming. Many viewed farmers as old men, dressed in overalls that are dirty, smelly, and chew on a straw. Education was seen as marginally important to a career in agriculture. It is disturbing to note that not only were some (urban) youth ignorant of agriculture, they wished to remain so. They had no interest in agriculture and seemed to view a career in agriculture with disdain or at least apathy. In the focus groups, knowledge about agriculture and its importance did not vary significantly from rural to urban youth. This kind of ignorance reaffirmed my interest in pursuing a second career in agricultural education, especially aimed at our youth.

In 1987, after a 33 year career with the U.S. Soil Conservation Service (SCS - now NRCS) in several locations and positions in Iowa, I accepted an affiliate instructor position on the faculty at Iowa State University (ISU), Department of Agricultural Education and Studies. As outreach coordinator for the Department, I have developed agricultural education curriculum and programs for K- 12, and in-service agricultural and science teachers. In over 40 years of experience, my overriding passion has been to make a difference as it relates to engaging students in agri-food systems experiences so they may appreciate opportunities in the food and fiber system industry. Closely associated with that passion is a desire to help all students develop a fundamental understanding of the need to protect our natural resources with regard to agriculture and to the development of a quality food and fiber industry.

To meet my passion for helping youth become conversationally literate in agriculture, I applied for and was fortunate to receive a grant from the ISU Vision 2020 Program in 1996. This was the first year the W. K. Kellogg Foundation made funds available for the new ISU Vision 2020 agricultural education initiative—an initiative to demonstrate new models of education as we prepare for Year 2020. As a result of these grant funds, an exciting program has emerged with unique goals for an agricultural education program.

The goal of the program was to build a new educational model that links youth at an early age with the agricultural industry. During the past four years, a pilot "Early Career Path" project linking the food, fiber, and environmental science industry has emerged in Iowa. The program developed into the "ISU Global Pizz-A-Thon," supported by business and industry in conjunction with Iowa State University. The program has four major objectives that are based on engaging students in hands-on activities that will help them:

- ☐ Gain an appreciation of agriculture – the food and fiber industry.
- ☐ Develop skills needed for individual growth and career success.
- ☐ Explore and experience realistic careers in the food and fiber industry.
- ☐ Realize the connection between school curriculum and their present and future lives.

Overview of the Pizz-A-Thon Process

In designing the program, my first important challenge was to determine why our present agricultural education system was not impacting the majority of our youth and then create a program that would attract them. One possibility youth make up an important part of the consumer market. In my opinion the key was to meet the kids where they are—how do you get their attention? I thought my best opportunity would be to connect with their stomachs—they like pizza. Pizza also offers a broad option for ingredients with many types of pizza offered today. This popular kid's food exercise allows for linking a wide variety of the ingredients and agricultural products, encompassing many careers, with agriculture at the foundation.

Middle school students compare and contrast plans as part of the Pizz-a-Thon.

In preparing students for the ISU Pizz-A-Thon, teachers/leaders use a self contained kit to engage students in skill building: problem solving, cooperative learning, communicating, presenting and demonstrating with experiences involving science, math, natural resources, economics, business, food safety, natural resources, and agriculture. The kit includes an implementation manual and/or CD-ROM and a copy of Earthworm Empire: The Living Soil book (Weber, E. (1996). The key to success of the program is to engage students in something they are vitally interested in—a favorite food. Team activities result in the development of research and presentation skills, as the students are exposed to agriculture, the food and fiber industry, and associated careers. Teams of students create and design a pizza, determine its topping ingredients, identify food stages by tracing those ingredients back to their origin (soil and the importance of living soil organisms), and prepare and deliver a marketing portfolio to sell their pizza to a company. In some schools, the program has gotten so big that teachers are having local run-offs to choose the team that advances to Iowa State University.

The outstanding team represents its middle school in a statewide competition at ISU in May each year. When students arrive at the university, during the first day they explore the campus and engage in agricultural production activities at ISU farms and the horticulture greenhouse. On the second day, students engage in activities at a local pizza restaurant to reinforce the importance of management in any career and they get a sense of running a pizza restaurant. To culminate their experience at ISU, teams bake their "prize pizza" in the ISU Family and Consumer Science kitchens and have a sensory contest. Finally, teams present marketing reports that are judged by sponsor representatives.

The Pizz-A-Thon concept is "deliverable" to others across the country. A team of middle school science students and teachers from North Carolina will participate in the May 2000 ISU Global Pizz-A-Thon. The students from Smithfield, North Carolina will not only develop their "prize pizza," they will grow some of the ingredients in their school garden and portable greenhouses. To further extend the reaches of the Pizz-A-Thon, the program is translated to Spanish. The program is ready for implementation in a Latin American school and in some communities in the US where there are populations of Spanish speaking students.

Summary

In all my experiences in education, I have never seen such highly motivated students and teachers as I have observed in the Pizz-A-Thon program. This program illustrates the type of educational model needed to attract a broad cross section of students and teachers to agri-food system concepts and principles. The program meets students where they are—as consumers, and leads them to an awareness of the agri-food systems industry and associated careers. With four years of program experience, actively engaging students in an exciting program, participants are finding a connection between school curriculum and their present and future lives. If the program is fully implemented, it should have a positive impact in furthering the cause in conversational literacy in agriculture. For program information contact 515-294-0893 or eweber@iastate.edu.

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AUTHOR INDEX — VOLUME 72
July-August 1999 to May-June 2000

Note: TheAuthor Index presents author's name, month(s) of issue, and page number(s).

SUBJECT INDEX - VOLUME 72

July-August 1999 to May-June 2000