The Agricultural
EDUCATION
MAGAZINE

January/ February 2008 Volume 80 Issue 4

Sustainability--*How do you make that happen?*

By Billye Foster

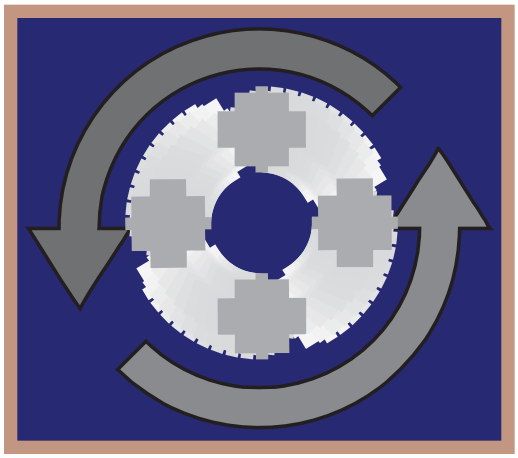
As you move from article to article in this issue, don't be concerned about your vision. You are NOT seeing double, there really are two pictures of all the authors. Reading through this group of articles and contemplating the meaning of sustainability, I realized like most things we all take different perspectives on most issues. Sometimes it is almost like there are two people inside of us struggling to come to consensus on the topic at hand. It was that realization that led to the double images of each author. A salute to the time and reflection required to produce thought provoking work!

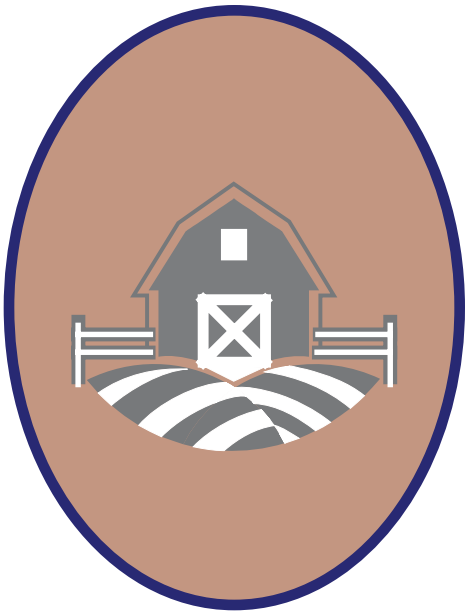
Sustainability is not a word we typically associate with education. We might sustain a sound or a musical beat. Sustaining an advertising campaign is common, or even sustaining an exercising routine might cross our mind. However, those of us in the profession of Agricultural Education typically associate the word "sustainabilty" with the concept of sustainable agriculture.

Visiting the University of California's Sustainable Agriculture Website, I found this statement:

"*Although these changes have had many positive effects and reduced many risks in farming, there have also been significant costs. Prominent among these are topsoil depletion, groundwater contamination, the decline of family farms, continued neglect of the living and working conditions for farm laborers, increasing costs of production, and the disintegration of economic and social conditions in rural communities*" (http://www.sarep.ucdavis.edu/concept.htm).

After reading this statement relating, of course, to production agriculture, I thought of the parallel to education. Are we not seeking ways to sustain positive education for all? As a discipline, doesn't agricultural education continually look for ways to reach an ever-changing student audience? As each generation moves steadily away from production agriculture, don't we seek to sustain humankind's natural connection to the earth and the art of reaping its bounty? And isn't education the REAL key to sustaining anything?





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Sustainable Agriculture--Sustainable Education:

How can we ensure a future for Agricultural Education?

Subscriptions

Subscription price for *The Agricultural Education Magazine* is $15.00 per year. Foreign subscriptions are $25.00 (U.S. currency) per year for surface mail, and $40 (U.S. currency) foreign airmail (except Canada). Orders must be for one year or longer. We can accept up to a three year subscription. Refunds are not available. Please allow 4 - 6 weeks delivery of first magazine. Claims for missing issues cannot be honored after three months from date of publication, six months for foreign subscriptions. Single copies and back issues less than 10 years old are available at $5 each ($10.00 foreign mail). All back issues are available on microfilm from UMI University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106. UMI University Microfilms telephone number is (313) 761-4700. In submitting a subscription, designate new or renewal and provide mailing address including ZIP code. Send all subscriptions and requests for hard copy back issues to the Business Manager: Jay Jackman, National Association of Agricultural Educators (NAAE) 300 Garrigus Building, 325 Cooper Drive, The University of Kentucky, Lexington, Kentucky 40546-0215, Phone: (859) 257-2224, FAX: (859) 323-3919.
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Article Submission

Articles and photographs should be submitted to the editor or theme editors. Items to be considered for publication should be submitted at least 90 days prior to the date of the issue intended for the article or photograph. All submissions will be acknowledged by the Editor. No items are returned unless accompanied by a written request. Articles should be typed double-spaced, and include information about the author(s). One hard copy and one electronic copy of the article should be submitted. A recent, hardcopy photograph should accompany the article unless one is on file with the editor. Articles in the magazine may be reproduced without permission but should be acknowledged.

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Publication Information

The Agricultural Education Magazine (ISSN 07324677) is the bi-monthly professional journal of agricultural education. The journal is published by the Agricultural Education Magazine, Inc. and is printed at M&D Printing, 515 University Avenue, Henry, IL 61537.

Periodicals postage paid at Ames, IA 50010 and additional offices.

POSTMASTERS: Send address changes for *The Agricultural Education Magazine* to the attention of Jay Jackman, National Association of Agricultural Educators (NAAE) 300 Garrigus Building, 325 Cooper Drive, The University of Kentucky, Lexington, Kentucky 40546-0215, Phone: (859) 257-2224, FAX: (859) 323-3919.

Sustainable Agriculture, Sustainable Agricultural Education

by John C.Ricketts

Sustainable Agriculture, Sustainable Agricultural Education is an interesting theme for this first issue of 2008. When you first read the theme and begin to analyze its meaning you may think there are two separate concepts we are trying to deal with, but as you read the wonderful set of articles in the pages that follow you will see that sustainable agriculture introduces some concepts that may help us sustain agricultural education. You may also discover, as I did, that sustainable agricultural education could be a key to sustainable agriculture. So, the theme makes sense after all, doesn't it? Well, there was one other thing I was struggling with as I read through the articles in this issue. Is sustainability (sustaining something for a long time without harming the environment or diminishing a resource) really what we are after? What we really want to do "is hold true to the best traditions" of agricultural education, while also seeking appropriate changes that are simply the right thing to do.

I would argue that the total program of agricultural education (Classroom teaching, SAE, FFA) is one of our best traditions. Several of the articles in this issue address different components of the total program and provide suggestions for sustaining these programs and for improving them. (In fact, I can't wait to try out some of the specific ideas and to share some of the others with my soon to be agriculture teachers.) One component of a total program is classroom and/or laboratory teaching. The articles in this issue provide formal (classroom) and non-formal teaching techniques for improving students' academic and personal levels of achievement.

Academic achievement is an *en vogue* buzzword in public education, but what does it mean? As agricultural educators we know that student achievement comes in many forms (i.e. leadership, problem-solving, responsibility, critical thinking, etc.). To many policy makers and school principals it means students who make better grades and who score better on standardized tests. This issue of the magazine speaks to all types of student achievement, and if all of us could adopt a large portion of the suggestions made in this issue we would be well on

The road to sustainable agricultural education may be long and sometimes tedious, but the goal is one we cannot ignore.

Photo courtesy of B. Foster

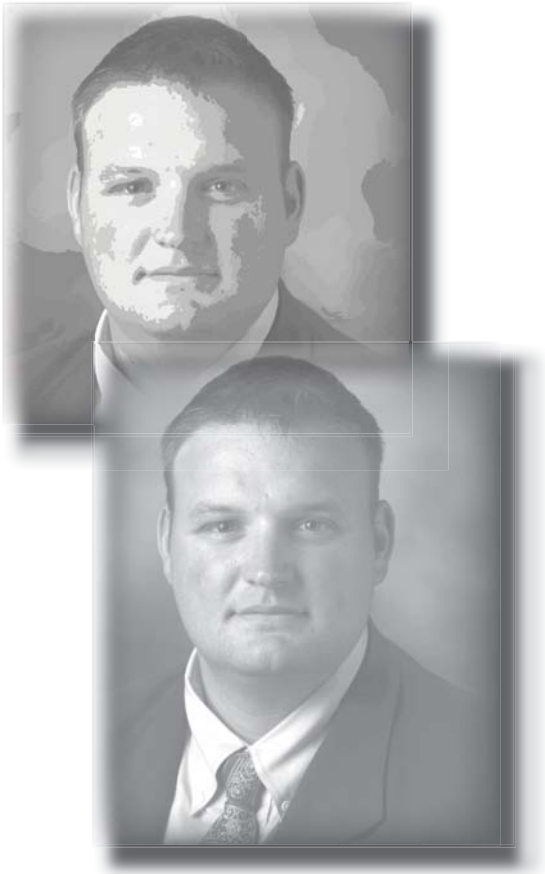
our way to a sustainable future.

In the article by Park, *Literacy as it Relates to Sustainability in Agricultural Education*, it is noted that literacy (another buzzword in our schools) is reading and writing, but its also ways of thinking and the competencies, skills, and knowledge that our students need to function in all phases of society. Thoron and Myers' article, *Agriscience: Sustaining the Future or Our Profession*, also speaks to preservation and innovation agricultural education teaching methodologies and practices. They provide classroom and laboratory ideas for developing students who can solve problems and think critically.

In this election year, the term "change" has been thrown around like a 5 pound bale of hay, but what we really need is "progress." Progress recognizes the accomplishments we've made while looking for growth and improvement. In this issue Duncan and Navarro show us a way to cultivate this change and make this progress using a classic adoption model. In the article, *Cultivating a Program for Sustainable Agricultural Education* by Frank Flanders, the context of where we have been, what challenges we have, and where we should go in regards to sustainable agricultural education is clearly laid out. His suppositions for growth and improvement are not only supported by recent initiatives such as the 10 X 15 project and the National Research Agenda for Agricultural Education, but also by articles in this issue by Horstmeier (*Here by the Owl! Agricultural Educators' Role in Sustaining Leadership Development*), Brierton (*Learning Sustainability from Each Other*), Priest (*Career Decision Making for Agriculture Students' Sustainability*), and Alston, et al. (*Cultivating and Investing in the Agricultural Education Diversity Landscape*).

As you will read in the pages that follow sustainable agricultural education relies on our ability to incorporate a few important ideas. These ideas are not necessarily new, but some could argue that they have yet to be adopted by the whole of our profession. These ideas include moving agricultural education in to urban settings, focusing on leadership in new and different ways, helping students make career decisions using an array of resources, and finally understanding that a diversity of students is not only the right thing to do – it is very positive for the program and more importantly, positive for our students.

Enjoy this issue, which I hope will challenge to you to think about the viability of our profession.



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THEME ARTICLE

Cultivating a Program for Sustainable Agricultural Education

By
Frank B. Flanders

A Question of Sustainability

Just about everyone who becomes involved in Agricultural Education soon realizes that it is an exceptional educational program with the power to unlock students' potential and prepare them for the future. However, Agricultural Education is currently only a relatively small part of the American educational system. Just 18.7 percent of U.S. schools (grades 7-12) have an Agricultural Education program. If, as has been the case in the past, about 10 percent of the students in the schools having Agricultural Education are actively enrolled in the program, then it can be calculated that less than two percent of the total U.S. student population is being served by Agricultural Education. This situation is exacerbated by the fact that the majority of Americans are at least two generations removed from farming, and have little knowledge of or affection for agriculture. When the increasing competition for educational funding at all levels is thrown into the mix, it is easy to see why some in the profession question the long-term future of the program.

Beginning Teacher Perspective

As a first-year teacher of agriculture, I thought that as long as I did a good job in the classroom and community, the program would be valued by the public and thus would continue indefinitely. During that first year, the threat of budget cuts taught me that an agriculture teacher must cultivate the program within and outside the profession. This is the message that I have tried to instill in new teachers ever since. A wise old teacher once stated, "You have to cultivate the program with a hoe in one hand and defend it with a weapon in the other hand."

The Case for Sustainability

The program's main objective -- and the task Agricultural Educators like to do best -- is preparing students for career success and creating lifetime awareness of the global agricultural, food, fiber and natural resources systems. However, the program must survive in order to allow Agricultural Educators the opportunity to ensure student success.

Survival means being proactive in planning and cultivating a sustainable program of Agricultural Education. This program and agriculture are far too important for the profession to be complacent when it comes to insuring the future. Agriculturally related jobs account for 17% of the workforce. Even if people do not work in agriculture, they still need to understand the importance of this dynamic industry. Leaders in agricultural industry are keenly aware of the need for agricultural awareness/literacy. Scientific agriculture made civilization possible; now it must sustain it. Agricultural Education has an important part to play in that mission, but the program itself has to be sustainable. The challenge goes out to all members of the Agricultural Education family to do their part in making sure the program continues to thrive.

> "Burn down our cities and they will spring up again as if by magic; but destroy our agriculture and grass will grow in the streets of every city in the country."
> -- William Jennings Bryan

One of the most significant initiatives in Agricultural Education was the national study,

"Reinventing Agricultural Education for The Year 2020" by the National Council for Agricultural Education (2000). A diverse group of more than 10,000 people from across the nation participated in the project. This study, involving long-range visioning and strategic planning, provided an opportunity to shape the future and meet the needs of society by creating a new vision for Agricultural Education.

Rather than reacting to change, the participants in this initiative took a proactive stance and looked ahead to develop a shared vision and to create the "preferred future" for Agricultural Education. The forward-thinking nature of our profession did not stop there. In fact as recently as this past year, a committee appointed by the National Council for Agricultural Education decided upon prioritized action steps to improve the growth and quality of Agricultural Education programs.

> "The future is not a result of choices among alternative paths offered by the present, but a place that is created first in the mind and will, next in activity. The future is not some place we are going to, but one we are creating. The paths are not to be found, but made, and the activity of making them, changes both the maker and the destination."
>
> -- John Schaar - futurist

The agricultural education program is fortunate to have a long history of futuristic, visionary leadership at the national level. Programs like the Long-Range Strategic Plan for Agricultural Education, innovative curriculum model development, National Program Standards, National Curriculum Content Standards Project and the National Research Agenda in Agricultural Education have helped guide the program.

Proposed Initiatives for Sustainability

The success of Agricultural Education is dependent on the identification and implementation of numerous steps and processes in visionary planning. The following list of initiatives is a reminder of what must be done to cultivate the program in order for it to flourish in the future:

- **Academics:** Continue to emphasize academic skills in agriculture education. The program must continue to contribute to the total educational experience of the student.
- **Agricultural Awareness/ Literacy:** Provide instruction to all levels of elementary, secondary, post-secondary and adult students. Cooperate with industry in the awareness effort.
- **Agriculture Industry:** Keep/ improve ties with agricultural industry. Expand partnerships on the national, state, and local levels with industry groups and organizations.
- **Careers:** Publicize the wide variety of rewarding careers that will be available for future agriculturists. Parents as well as students should be educated on career opportunities.
- **Continuing Education:** Provide adult instruction in agriculture. Encourage and contribute to the lifelong learner educational model.
- **Competitive Teacher Salaries:** Compare program personnel salaries with equivalent workers in agricultural industry.
- **Comprehensive Agricultural Education:** Provide complete programs of agricultural education. All students should be provided the benefits of FFA, SAE, laboratory, etc.
- **Curriculum:** Provide curriculum frameworks and guidelines on content and standards at the national level. States should work cooperatively in curriculum efforts.
- **Diversity:** Encourage diversity among students: provide new emphasis on representative student/member composites for growing populations such as Hispanics.
- **FFA:** Keep FFA strong. Emphasize the real value of agricultural education, not just the subject matter, but the life knowledge skills we know are so important.
- **Funding:** Secure sufficient funding to meet program needs. Monitor funding at local, state and national levels.
- **Futuristic Planning:** Look to 2040. Futuristic planning, like the 10 x 15 initiative, should continue to provide direction to create the "preferred future".
- **Leadership Positions:** Maintain or re-establish state staff leadership positions. The state staff should have responsibilities only in agriculture education.
- **Legislative:** Establish a proactive and positive legislative agenda and presence at the state and national levels.

Continued on page 8

- **Middle Schools:** Expand the middle school program. This is the single most important opportunity for program growth and should be explored at the national and state levels.

- **National Program Standards:** Implement national standards as a guide for the profession -- guidelines for quality programs across the nation.

- **Cooperation:** Establish collaborative relationships on the state and national levels with major players such as Agriculture Extension, Agribusiness, various educational groups, etc.

- **National Curriculum:** Work cooperatively on curriculum materials. Set up a national service organization to provide guidance on educational materials development.

- **Leadership Education:** Concentrate on key activities that promote leadership in the profession. Encourage and mentor others to prepare for and enter leadership positions.

- **Marketing the Program:** Publicize the value of a program in Agricultural Education at all levels. Publicize the positive results and success of students.

- **Program Numbers:** Increase the number of schools that have Agricultural Education programs. Promote enrollment within those schools.

- **Program/Subject Content:** Continue to revise program content and subject matter to reflect needs of students and the industry. Use changes in the industry as a guide.

- **Publicity:** Expand the public understanding of agriculture and agricultural education. Emphasize and publicize student success at the state and national levels.

- **Student Recruitment:** Establish an on-going recruitment program for students. Make students aware of the wide variety of exciting and rewarding careers in agriculture.

- **Teacher Organizations:** Keep the NAAE and related state and national professional organizations in agriculture education strong. Encourage 100 percent membership.

- **Tradition:** Protect the components of the program that have made it successful – SAE, FFA, hands-on learning, etc. Remain grounded in the basic philosophy of AgEd.

- **Teacher Education:** Maintain or establish teacher education programs with the mission of training agriculture teachers. Establish closer ties to agricultural colleges.

- **Teacher Recruitment and Retention:** Actively recruit, retain, and reward quality individuals to teach agriculture and participate in the professional organizations.

- **Technology:** Embrace technology. Learn to use MP3's, YouTube, Google Earth, text messaging, RSS feeds, social networks, video games, etc., for educational purposes.

Conclusion

The best hope for ensuring sustainability of Agricultural Education lies in Agricultural Educators' ability to come together as a team to successfully address the challenges and opportunities facing the profession. The profession must work together for Agricultural Education to continue to be a powerful and effective force for guiding students to a successful future.

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THEME ARTICLE

Agriscience: Sustaining the Future of Our Profession

by Andrew C. Thoron and Brian E. Myers

Sustainable agricultural practice refers to the ability of a farm to produce food indefinitely, without causing irreversible damage to ecosystem health. According to Feenstra (1997) "sustainable agriculture integrates three main goals—environmental health, economic profitability, and social and economic equity". Reflecting on the Sustainable Agriculture–Sustainable Education topic we can gleam some principles from our industry partners.

Using the industry's definition of sustainable agriculture as a guide, we may define sustainable agricultural education as "the ability to produce agriculturists indefinitely, without causing irreversible damage to our core values." Using this framework for sustainable agriculture and the National Research Agenda 2007-2010 (Osborne, n.d.) as a guide, sustainable agricultural education involves three main goals—curricula adapted to the needs of our students, enhanced program delivery through integration of industry concepts, and assessments which address both student and district needs.

How can we increase (quantity and quality) our development of agriculturists? Local control and shared input from teachers across the nation can provide valuable insight into this issue. A common thread has emerged through the years in successful programs which are able to produce agriculturists indefinitely. The integration of agriscience into the curriculum is an important consideration. Since the mid-1980's agricultural education has been in the process of incorporating science into the agricultural education curriculum. Research supports this integration which also indicates teachers are supportive of agriscience education and the transition from purely production to a more consumption focus. Numerous states allow agricultural education courses to satisfy science requirements for high school graduation and college admission. As a profession we now must ask ourselves, are we integrating science into our agricultural curriculum or are we teaching agriculture as an integrated science?

At first glance the previous sentence may be confusing. Integration of science into the curriculum means taking specific science concepts and then finding an agricultural application. Teaching our students about photosynthesis or the components of the water cycle are examples. This approach considers what science concepts are to be taught first, then finds agricultural principles to illustrate those science concepts. Conversely, the development and implementation of an agricultural curriculum that teaches agriculture as the integrated science – the science where biology, chemistry, and physics all come together - would

Looking Back

An interesting activity that goes hand in hand with producing this magazine, is reflecting on information past and present. In case you have access to past issues, here are a few articles you might want to look up....

1932, January, Volume 4, No. 7
- Suggested activities for developing Supervised Practice Problems common to a group of beginning students, Don M. Orr
- Suggestions on Farm Shop Management, Carl G. Howard

1942, January, Volume 14, No. 7
- A farm shop clean-up plan, Roy A. Olney
- Evaluation from the point of view of a teacher, L. J. Hayden

1952, January, Volume 24, No. 7
- A study of the occupational status of state farmer degree members in Kansas, Frank R. Carpenter
- Vocational education and the individual, Raymond M. Clark

1962, January, Volume 34, No. 7
- A new Farm Mechanics contest, Carl S.Thomas
- "Operation Concrete," Clayton R. Olsen and Ray Husen

1972, January, Volume 44, No. 7
- Change needed in Agricultural Mechanics curricula, Wiley B. Lewis and Ralph J. Woodin.
- National Agricultural Mechanics Contest--A reality in the making, Thomas A. Hoerner

Interesting to see the similarities and the changes in these five decades. Take time to visit the past--and see how it compares to today!

highlight the science which already exists as the foundation of agricultural practices. This approach begins with the practices and then works to explain the scientific principles behind it – why it works. Discovering what genotypes are tied to efficient milk production in dairy cattle is an example. It is this second approach that will lead to agricultural education sustainability.

Effective use of technical agriculture and partnerships with industry help shape the programs which develop students who have a scientific way of thinking. Development of science process skills and students having the ability to think critically when faced with a problem are important attributes of the next generation of learners. Gardner (2006) writes, in his book titled Five Minds of the Future, about the need for learners who can think critically and recognize changes when they need to be made. He goes onto state our educational system as a whole does not do enough to promote this type of learner. It is in this gap that agriscience education can stand to support not only our industry of agriculture but be an active and productive member of the educational system.

Agriscience education has a unique ability to develop this critical thinking type of student. This requires curricula adapted to the needs (current and future) of our students, integration of industry concepts, and assessments addressing both student and district needs. Continual focus on sustainable agriscience education requires inquiry based learning leading to students developing much of their own thoughts about science through laboratory activities. These laboratory activities may occur in the land laboratory, greenhouse, garden, mechanics laboratory, computer simulations, or many other locations.

Agriscience education is a leading component in the progress toward sustainability due to these facts and the growing demand for science based agricultural careers. According to the USDA Cooperative State Research Education and Extension Service (CSREES) most recent report in 1999, 32% of all agricultural jobs will require scientific degrees in food science and engineering. The need for formal education be-

Agriscience education is a leading component in the progress toward sustainability due to these facts and the growing demand for science based agricultural careers.

yond high school is evident. This formal education may be a 6-month certificate program, an associate's degree, or an advanced degree. With job opportunities abundant and industry facing the effects of the baby boom generation retirement, Agriscience educators must heed the call of preparing the next generation of agriculturalist.

Educational curricula receive their strength from the teachers in the classrooms. No organization, state, or national persuasion can change agricultural education as effectively as the classroom teacher. The teacher-led push toward sustainable agriscience education focuses on two goals – reflecting on where we teach and how we teach.

To be sustainable in a changing future, agriscience education must better utilize laboratory facilities which promote critical thinking skills. Perhaps, for some educators at the local level this means reinventing the "shop" into a learning laboratory which contains computers, experiment stations, and scientific equipment. More simply, mechanics laboratory facilities should be better utilized to effectively teach physical science principles in agriculture. Partnering with industry to bring in industry equipment and to train students with updated modules is one way to sustain agriscience education.

Secondly, being honest with ourselves as teachers by reflecting on our teaching methods and philosophies we present to our students. As a profession we must continually ask ourselves if we are really teaching agriscience as the integrated science or have we just renamed our curriculum and placed it in a new package. It is astounding to recognize that students in our classrooms today will be working with technology in their future careers that has yet to be invented. Are we preparing students for these future jobs? Do our students leave our programs with the knowledge and skills to adapt to this new reality or are they equipped with an antiquated skill set?

The key to the sustainability of agricultural education is through agriscience education which can effectively teach students how to think and how to construct their knowledge. Employers seek students who can solve problems and work with others, and agriscience education is

the best vehicle to attain those goals.

References:

Feenstra, G. (1997). What is sustainable agriculture? Retrieved December 1, 2007, from UC Sustainable Agriculture Research and Education Program, University of California, Davis, CA. Web site: http://www.sarep.ucdavis.edu/concept.htm

Gardner, H. (2006). Five minds for the future. Boston, MA: Harvard Business School.

Goecker, A. D., Gilmore, J., & Whatley, C. (1999). Employment opportunities for college graduates in the food and agricultural sciences: Agriculture, natural resources, and veterinary sciences, 2000-2005. Retrieved December 6, 2007, Web site: http://faeis.ahnrit.vt.edu/hep/employ/employ00-05.html

Osborne, E. W. (Ed.) (n.d.) National research agenda: Agricultural education and communication, 2007–2010. Gainesville, FL: University of Florida, Department of Agricultural Education.

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March/April 2008

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"Passing the Torch--What do *you* say to students considering a career in Agricultural Education?"

"Enrollment in teacher education programs in agriculture is at an all-time low, but the demand for well-educated agriculturalists is at an all-time high," (Robert) Martin said. "The retirement of baby boomers is beginning to increase the need for teachers in agriculture and other related areas, such as science, math and consumer sciences" (Iowa State University College of Agriculture and Life Sciences' News Release, August 2007).

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for what he does. In fact, he has been named a National Milken Educator and was one of nine American agricultural teachers that helped develop curriculum for Russian and Ukrainian schools through the National FFA Organization (www.holmen.k12.wi.us). King's enthusiasm for agricultural education has stayed strong because of great students, a supportive school district, and the connections and camaraderie provided by professional organizations (King, personal communication, Sept. 20, 2007).

To keep educators like King, we need to prevent the attrition of agriculture teachers. Gossen provides the following reasons for teacher attrition: "better pay by industry, expectations of the school on the teacher, time [restraints], and eventual teacher burnout" (personal communication, 2007). Between creating and updating curriculum, teaching in the classroom, overseeing supervised agricultural experiences, and advising FFA, (Peake, Parr, Duncan & Ricketts 2006) agriculture educators have their hands full. It is not surprising teaches are leaving the profession.

Linda Darling-Hammond (2007), professor of Education at Stanford University, lists two factors relating to teacher recruitment and retention: strong teacher preparation and mentoring in the early years. We are fortunate in agricultural education to have two organizations - The Council and the National Association of Agricultural Educators (NAAE) that have created programs to address these factors. The National Council of Agricultural Education has a special project entitled "Creating and Enhancing 21st Century Induction Programs for Agricultural Education Teachers" (http://teacherinduction.cfans.umn.edu/). Utilization of teacher induction programs to support and provide professional development for new teachers has shown an increase in teacher effectiveness and retention. Through mentoring, new teachers are able to receive encouragement and support. NAAE and state-level organizations recognize the importance of mentoring by coordinating programs and awarding outstanding teacher-mentors.

The future of agricultural education rests on having a sufficient supply of agricultural teachers. The mission "Agricultural education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems " explains the importance of agricultural education (www.teamaged.org/aged.htm). By recruiting new teachers and providing support to current educators, we can guarantee the success of agricultural education for many years to come.

Bibliography

Ag Teacher's Creed. (n.d.). Retrieved September 20, 2007, from http://www.naae.org/about/creed/

Darling-Hammond, Linda. (2007, June 21). *Improving the nation's STEM capacity: Creating a systemic approach*. Retrieved September 12, 2007, from http://www.aacte.org/Governmental_Relations/hammond_STEM_testimony.pdf

Identifying potential teachers: Who will fill your shoes? (2007, January). *FFA Advisors Making a Difference, 4*, 15.

National Association of Agricultural Educators, (n.d.). *NAAE teacher mentor award application*. Retrieved September 20, 2007, from http://www.naae.org/awards/ applications/2007apps/

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Literacy as It Relates to Sustainability in Agricultural Education

By Travis Park

What is it about agricultural education that we want to be sustainable? Is our aim to sustain agriculture? What about sustaining student learning? Is our goal to sustain agricultural education? Are we to create and sustain a growing student population who are literate in and about all aspects of the food, fiber, and natural resource industries?

Here's what I'm sustaining as an agricultural educator and father: my daughter's blossoming love of learning and reading, hopefully about agriculture. On a recent Saturday, Carson (my daughter) invited a friend from church over for a play date. Near the end of the date, as I was grilling cheese sandwiches for lunch, Carson and her friend Amelia were sitting on the couch, and both were reading. Carson, just turning two years old, was reading Dr. Seuss's ABC. Suddenly, Carson let out a loud, "Kerchoo!" (For the letter k, Dr. Seuss writes, "Big K, little K. What begins with K? Kitten. Kangaroo. Kick a kettle. Kite, and a king's kerchoo.") To which Amelia replied just as loudly, "Kerchoo!" This went on for the next five minutes with the two of them laughing and giggling the whole time. And, the kerchoo reared its beautiful head the next morning in church during the homily, much to the delight of parishioners seated in the pews behind us and the chagrin of the priest.

Thinking about what we know through research in literacy, we know students' motivations for reading, as well as the kind of transferability demonstrated by Carson and her friend, will begin to decline at about the fourth grade. This decline will continue throughout high school and most likely into later life. Not coincidentally, this decline in motivation will also mirror for many students a diminishing skill set with which to navigate the more complex reading materials that are found in middle and high school classrooms, especially the highly technical language found in the agricultural sciences. For many students the combination of diminished motivation to read and the failure of their reading skills to help them create meaning from texts will lead to disengagement with formal education altogether. The future for Carson and her friends as readers and learners, the prospect of a negative attitude toward reading and learning is most alarming.

In our society, and especially in schools, literacy has evolved to mean the "competence, knowledge, and skills necessary to function on the job....

Thankfully, Carson will have the opportunity to enroll in agriculture courses in middle and high school. So, what about agricultural science education helps us sustain a culture of literature and lifelong learning? And, as an aside, we, all of us involved in agricultural education from teachers to teacher educators to other professionals at state and national levels, must creatively find ways to improve students' achievement and foster lifelong learning through what we do in the classroom, with SAE, and in the FFA. Thus, I believe there are several aspects related to agricultural education that may serve to motivate students to read and learn, hence become more literate about agriculture.

Before we launch into how agricultural education provides a sustainable basis for literacy and lifelong learning, let's review just a bit about literacy. Literacy is much more than the ability to read and write (Alvermann, 2001). Sure, in its most formal and basic sense, literacy is the ability to read and write. However, literacy also encompasses "ways of thinking" (Langer, 1991, p. 13). In our society, and especially in schools, literacy has evolved to mean the "competence, knowledge, and skills" (Dubin & Kuhlman, 1992, p. vi) necessary "to function on the job, in the family of the individual, and in society" (National Workforce Investment Act, 1998, p. 15). Thus, literacy is "interactive, constructive, strategic, and meaning-based" (Steelman, Pierce, & Koppenhaver, 1994, p.

River of life sustaining the valley....

201). To me, this sounds like a definition of how we use various text materials to teach our students in agricultural education? Our jobs as teachers are to develop career and personal skills and knowledge so that students are contributing members of their families, communities, and our country, hopefully through agriculture. How do our students in agriculture classes, in their SAE, and through FFA generate that kind of enthusiasm for learning and reading? Many ways, actually. In secondary agriculture courses, teachers and students are uniquely positioned to develop, encourage, and sustain engagement in reading and literacy in and about agriculture. Further, this engagement with literacy about agriculture will also sustain knowledgeable and lifelong learners.

First, as teachers of agriculture, we know our students from spending countless hours with them working on class projects, attending FFA events, and developing SAE. Knowing each student's individual strengths and weaknesses is one of the first steps to helping that student develop the literacy skills that are critical to success. I recently interviewed a teacher about how he approached literacy and reading in his classroom. Mr. Owl (name changed to protect the innocent) stated, "I realize I don't teach agriculture, I teach kids. And I happen to use agriculture as a tool for teaching kids." In this sense, Mr. Owl placed students at the center of his teaching and worked to enhance their individual literacy skills. Mr. Owl also stated that a teacher must be "sensitive to...recognizing there's so many [student] different levels."

Further, our agriculture curriculum holds the keys to some of the most promising practices related to literacy. Namely, those are providing a diversity of rich, authentic reading material; providing a real-life context in which to apply knowledge to solve problems; and the use of many kinds of technology with diverse genres of text (Binacarosa & Snow, 2006). In other areas of academic instruction in a high school or middle school, teachers try to replicate reality. In agriculture classes, we have reality in the ways of laboratories, greenhouses, shops, barns, outdoor labs, and fields. Our students define real problems associated with agriculture, and then use their literacy skills to find the answers to those problems. In most cases, we even test our solutions through application. This whole process enhances the literacy of our students in an "interactive, constructive, strategic, and meaning-based" way (Steelman et al, 1994, p. 201).

As agriculture teachers, one of our aims should be to promote agricultural literacy in its most dynamic

definition. In doing so we must approach education from many directions. As a teacher I saw that manifested through several of the newer FFA career development events, namely the agricultural issues forum and the agricultural communications CDE. These events, like several others, challenge students to define issues and problems in agriculture, identify sources of information, gather information, assess solutions or stances on the issue, and develop a presentation that communicates the intricacies of the issue to outside audiences.

As a teacher, one of my finest moments occurred when working with our agricultural communications CDE team. The team, two juniors and two sophomores were working feverishly each night after school to finish the presentation. Their efforts led to working on a Friday night after school, which also happened to be a Friday evening when I was traveling out of town. These students were so engaged and motivated, that out of courtesy for them I stayed later than I should have, called a parent to chaperone them when I left, and ordered pizza so they'd maintain their stamina. These students were so engaged in this authentic literacy activity that they worked on the project until nearly 9:30 that night. This demonstrated the power of an authentic literacy activity in FFA that so engaged and challenged students that they willingly gave up their Friday night because they were in the flow of the literacy and FFA moment. If we want students to love learning about agriculture and if we want them to develop skills that enable learning in the future, then equipping students with literacy skills is critical to achieving these ends. Literacy is an empowering set of skills that enable our students in many ways. In agricultural science, with a bit of effort toward the implementation of literacy, teachers can contribute to students' academic achievement and help them develop and sustain the skills for lifelong learning. We equip students with the skills and knowledge to let them do anything they set their minds to. With the use of literacy in agricultural science education, we have the opportunity to empower students to become literate citizens and learn for the rest of their futures.

References:

Alvermann, D. E. (2001). Effective literacy instruction for adolescents. Executive summary and paper commissioned by the National Reading Conference. Chicago, IL: National Reading Conference.

Biancarosa, C., & Snow, C. E. (2006). Reading next—A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York (2nd ed.). Washington, DC: Alliance for Excellent Education. Dr. Seuss. (1960). Dr. Seuss ABC. New York: Random House Books.

Frick, M. J., Kahler, A. A., & Miller, W. W. (1991). A definition and the concepts of agricultural literacy. Journal of Agricultural Education, 32(2), 49-57.

Langer, J. A. (1991). Literacy and schooling: A sociocognitive perspective. In E. H. Hiebert (Ed.), Literacy for a diverse society: Perspectives, practices, and policies (pp. 9-27). New York: Teachers College Press.

National Workforce Investment Act of 1998, Pub. L. No. 105-220.

Steelman, J. D., Pierce, P. L., & Koppenhaver, D. A. (1994). The role of computers in promoting literacy in children with severe speech and physical impairments. In K. G. Butler (Ed.), Severe communication disorders: Intervention strategies (pp. 200-212). Gaithersburg, MD: Aspen.

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Did you know February was Black History Month? Probably so, but do your students know? This year, why not do something different during February? Why not create a bulletin board saluting famous African American agriculturists?

George Washington Carver

Born in 1864, George Washington Carver paved the way for agriculturists to come. This is one of the greatest examples of dedication in Human History. A single urge of learning has overcome the sufferings and hardships of slave life. He was the second African American to make it into the hall of fame. George Washington Carver, in the end, achieved his goal as the greatest agriculturists and so much more. Everything that he invented, he invented for the benefit of mankind.

Dr. Annie King, associate dean at the college of agricultural and environmental sciences at the University of California-Davis says she has found that students shy away from agriculture.
"I was taught by my parents, who had been sharecroppers, that working on the land or with products from the land was an honorable profession," King says. "But many parents and grandparents today tell young men and women about the great hardship associated with slavery or they speak about dirty, hard work with Iow pay, or even the loss of family-owned farms.
"Students bring these stories forward with them into high school and college, thus missing many new, rewarding experiences and careers," she adds.

Paul Howland Logan was the first African American forester hired by the Forest Service, who had to "pass" as white in order to earn his forestry degree from Cornell University in 1926 and then to work for the U.S Forest Service.

These are but three of many possible personalities. You might hold a contest for the most interesting African American connected to agriculture--past or present! Other interesting facts relating to the FFA:

- 1965

The New Farmers of America (NFA), the organization for African-American agricultural education students, merges with the FFA, adding 50,000 members

- 1974

Fred McClure of Texas is elected national FFA secretary, becoming the organization's first African-American national officer. McClure would later serve on President George Bush's staff in Washington, D.C.

- 1994

Corey Flournoy of Chicago, Ill., is elected national FFA president, becoming the organization's first African-American president and first urban student leader.

If you are interested in a broader range of reflections, consider a reading assignment involving the letter Dr. Martin Luther King wrote in response to a statement by Alabama clergy when he was jailed in Birmingham for leading a protest march. It is powerful and insightful and available on a variet of web sites including, http://www.africa.upenn.edu/Articles_Gen/Letter_Birmingham.html.

What ever you decide will work well for your class and your community, take a moment yourself and reflect on the miracle of diversity that is America. With all her flaws and issues, it is still a wonderful place to live!

"Democracy is not a state. It is not some high plateau that we struggle to reach so we can finally settle down to rest. Democracy is an act."

Martin Luther King, Jr.

THEME ARTICLE

Cultivating and Investing in the Agricultural Education Diversity Landscape

by Antoine J. Alston, Chastity Warren English, Paula Faulkner, Sarah Johnson & LaShawn Hilton

Successful farmers in Eastern North Carolina have two adages: 1. *Plan today for what you will plant tomorrow, and 2. Know your market.* These statements are directly correlated with the state of diversity within the discipline of Agricultural Education. Agriculture is the nation's largest employer, and according to various demographic studies, diverse populations will need to be recruited in order to sustain the agricultural industry for the future. Given this factor in relation to diversity within agricultural education one must ask the following questions. *What is diversity? What are the selected diversity sub- dimensions that affect agricultural education?* And *what are some possible solutions to sustain and enhance the agricultural education diversity landscape?*

Diversity is defined as those human qualities that are different from one's own and outside the group to which one belongs. Diversity can be divided into two categories, primary and secondary dimensions. Primary dimensions of diversity are determined by characteristics such as age, ethnicity, gender, physical abilities or qualities (e.g. race). Secondary dimensions of diversity are those that can be changed and include, but are not limited to educational background, geographic location, income, marital status, military experience, parental status, religious beliefs, and work experiences (Macionis, 1997). When studying diversity, one must further consider the concept of inclusion for members of these groups.

Inclusion is a pedagogical philosophy that brings diverse students, educators, families, and community members together in order to create schools and other social institutions based on community, acceptance, and belonging. Inclusion is built upon four major principles: Diversity, Individual Needs, Reflective Practice, and Collaboration. **Diversity** improves the educational systems for all students by placing them in general education environments regardless of race, ability, gender, economic status, learning style, ethnicity, cultural or religious background, etc. **Individual Needs** involves sensitivity to and acceptance of individual needs and differences. **Reflective Practice** insists that educators reflect upon their attitudes, teaching and classroom management practices, and curricula to accommodate individual needs. **Collaboration** involves groups of professional educators, parents, students, families, and community agencies working together to build effective learning environments (Salend, 2008).

Race and Ethnic Diversity

The United States is a melting pot of diversity, encompassing individuals with unique characteristics contributing to the persona of American life. Demographic figures indicate that Caucasians account for 75.1% of the population, with African Americans encompassing 12.3%, individuals of Hispanic or Latino Origin comprise 12.5%, and Asians, Native American, and Pacific Islanders collectively are 4.6% of the population (US Census Bureau, 2000). In relation to the current FFA membership 77% of the membership is Caucasian; 17% is Hispanic, and four percent is African-American (National FFA Organization, 2007). Given that the United States is a multicultural society, citizens need to understand and respect one another, both as individuals and as members of distinct groups (Grant & Sleeter, 1989).

Special Needs Diversity

Even though enrollment numbers in agricultural education have fluctuated over the years, the enrollment numbers of students with learning disabilities in agricultural education programs continues to increase. Learning disabilities are by far the most common disability among school-age children—more than half of students with disabilities are learning disabled (National Institutes of Health, 2002). Today, as many as 2.4 million children in the United States have been diagnosed with a learning disability and each year approximately 120,000 additional students are identified (Morrison & Elliott, 2000). Students with and without special needs can benefit from a total program of agricultural education.

Religious Diversity

In relation to diversity, religion can have a major impact upon the professional environment of any organization. Within the U.S., there

exist a plethora of religions that comprise the great "melting pot". Approximately 52% of the country is Protestant, 24% Roman Catholic, 2% Mormon, 1% Jewish, 1% Muslim, and other 10% (CIA the World Factbook, 2007). When working within a field like Agricultural Education, demographics such as these can greatly impact programming efforts as well as interpersonal relations between colleagues, students, and related clientele.

Diversity Pedagogical Solutions

The following section provides a summary of diversity pedagogical tips from the Office of Instructional Consulting within the School of Education at the University of Indiana (2006):

Race and Ethnicity

1)Avoid preconceived stereotypes regarding minority students' culture or ability to perform high or low work.

2)Avoid assuming the culture or racial identity of a student based upon their physical appearance.

3)Be cognizant of the ethnic composition of the community served and encourage interaction among students within and outside of class.

4)Consistently explore yours and your students' personal views and attitudes towards minority groups/ students in general.

5)As an educator, ask students about their preferred names and learn to correctly pronounce their names and additionally avoid assumptions regarding a student's linguistic ability.

Special Needs

1)Always remember that a student's disability is only a small portion of their total identity as a person and do not spent unwarranted time focusing upon the disability.

2)Be aware of what the student is able to do and plan alternatives ahead of time, additionally ensure that students participate in all class activities both orally and physically related.

3)Handle issues regarding the students disability related issues privately and offer alternatives in relation to exams and assignments that can alleviate student anxiety.

4)Be sure to critique and reward special needs students as you would any other student.

Learning Disability

1)Present material in a variety of ways: visual, aural, role plays, etc, and provide multiple opportunities to apply new material.

2)Provide students with a very detailed syllabus with regard to assignments descriptions.

3)Display patience with students when teaching especially difficult material, encourage students questioning, and provide thoughtful or constructive feedback.

4)Constantly monitor a student's progress and meet privately with the student in order to address issues.

5)Allow alternative testing formats or extended time where appropriate.

Religion

1)As an educator, assume that some of your students are non-Christians.

2)Assume each student has his or her specific beliefs and rituals, and cannot "speak for" an entire religion

3)When designing syllabi accommodate students' important religious holidays: allow for them in your planning and a make-up schedule.

Conclusion

Diversity concepts (the ones mentioned in this article and the many others which we did not have room to report on) must be consistently interwoven into the agricultural education classroom in both formal and informal settings. During a recent lecture in the *AGED 101: Introduction to Agriscience Education* course at North Carolina A&T State University, students were informed about the history of African Americans in agriculture. Students were surprised to learn that black cowboys comprised approximately 25% of the Western cowhands during the late 1800s. The lecture sparked many questions and great pride among the students in attendance to have learned about this significant part of agricultural history. Given the ever changing demographics of today's global society, is Agricultural Education ready to serve all stakeholders? If Agricultural Education as a discipline wishes to cultivate a diverse landscape for the future,

they must first plan and invest today. In the spirit of Eastern North Carolina farmers', Agricultural Education should plan today for what we will plant tomorrow and we should know our market.

References

Central Intelligence Agency (2007). The world factbook - United States. Retrieved September 26, 2007 from: https://www.cia.gov/library/publications/the-world-factbook/print/us.html

Grant, C., & Sleeter, C. (1989). Turning on learning: Five approaches for multicultural teaching plans for race, class, gender, and disability. Columbus: Merrill Publishing.

Indiana University - Instructional Consulting, School of Education (2006). *Teaching, technology, and diversity.* Retrieved July 8, 2007 from http://www.indiana.edu/~icy/divtips.html

Macionis, J. J. (1997). *Sociology*. New Jersey: Simon and Schuster.

Morrison, M., & Elliott, F. (2000). Working with vocational students from special populations: A reference book for administrators and instructors. Retrieved March 5, 2006, from: http://www.voc.ed.psu/projects/resources/documents/sppops.pdf

The National FFA Organization (2006). *FFA Statistics.* Retrieved April 24, 2006 from http://www.ffa.org/about_ffa/html/ffa_statistics.htm

National Institutes of Health. (2002). NIH guide: Mathematics cognition and specific learning disabilities. Retrieved March 31, 2007, from://http://grants2.nih.gov/grants/guide/rfa-files/RFA-HD-02-031.html

Salend, S. J. (2008). *Creating inclusive classrooms: effective and reflective practices. 6th Edition* Upper Saddle River, NJ: Merrill Prentice Hall.

U.S. Census Bureau. (2000). Quick-facts. Retrieved April 24, 2006 from, http://quickfacts.census.gov/qfd/states/37000.html

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THEME ARTICLE

Here by the Owl! Agricultural Educator's Role in Sustaining Student Leadership Development

by Robin Peiter Horstmeier

"I believe children are our future…teach them well and help them lead the way."

The popular phrase of this popular Whitney Houston song challenged society to teach youth to be effective future leaders. Agricultural Education has embraced that challenge since its beginnings in 1928. Teaching, leadership, and experiential learning have been integrated through Agricultural Education programs and we see it today as the traditional three circle model.

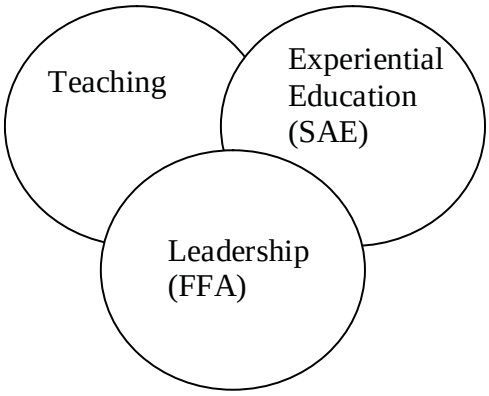

Figure 1. Traditional three circles of the total program of agricultural education.

The National FFA Organization is the vehicle for delivering leadership development opportunities to Agricultural Education students. Teachers serving as FFA advisors play an important role in sustaining students' leadership development. In fact, in opening ceremonies Advisors state:

> "The owl is a time-honored emblem of knowledge and wisdom. Being older than the rest of you, I am asked to advise you from time to time, as the need arises. I hope that my advice will always be based on true knowledge and ripened with wisdom" (National FFA Organization, 2007).

The Agricultural Educator's primary responsibility as an FFA advisor is work with students in creating leadership activities where the member's role is one of engagement. What determines quality leadership activities? How can we as a profession determine if we are teaching students *well and helping them lead the way*? What is the role of our members in these activities? Are advisors advising members *from time to time as the need arises*, or is the advisor role and specific responsibility go beyond "advising from time to time?" How can Agricultural Education ensure sustainability and a future of student leaders through our most visible product – the National FFA Organization?

How do we develop leadership in youth or adults? The *LifeKnowledge* leadership materials have been integrated through agriculture content in all grade levels. Is this enough? To have a sustained leadership experience, members

must engage in a context of leadership experiences focused in each of the four key developmental phases (Ayers, 1987).

1. First individuals must develop an expanded knowledge of **self**, that is, who they are, what they believe, and how they function. In FFA this is accomplished by members attending national conferences such as Made for Excellence (MFE), Washington Leadership Conference (WLC), Experiencing Discovery, Growth & Excellence (EDGE), and Advanced Leadership Development (ALD) where members examine their own self development.
2. Next, youth must move toward mastering skills necessary to work effectively with others (**Interpersonal**). One example is working within an officer team or structured committee.
3. In the next phase, individuals refine their skills working with **groups** or **organizations**. Often these activities are conducted within the chapter as a whole.
4. The final phase focuses on leadership within the context of **communities**, systems, and society.

In Agricultural Education, particularly with FFA members, the community could be the school or town in which they live. FFA chapters are widely known for their involvement in the local community. As the arena in which leadership is being practiced continues to broaden, members must use knowledge and skills learned at previous levels to be effective in the new context.

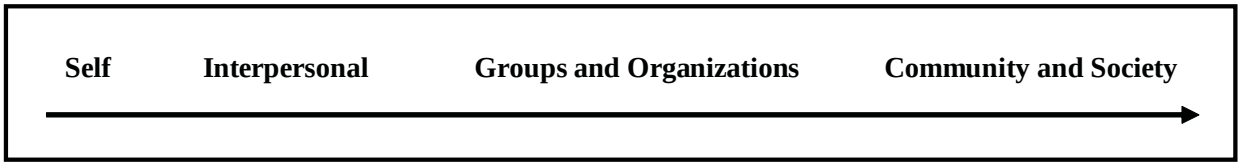

Figure 2. Context of Leadership Activity

The chapter activity planning process is important if leadership activities are to be sustained. For effective leadership development to happen members must be engaged and display ownership of the chapters' activities. How do FFA Advisors lead members to plan chapter activities for the year? What role do members play in developing the Chapter Program of Activities (POA)? What attitude do adults in your community hold regarding the members of your local FFA chapter?

Lofquist (1989) developed what he termed a "spectrum of attitudes" that adults may hold regarding the role of young people in society. The left side of his continuum (Figure 3) represents an attitude where young people are viewed as *objects*, being told what to do because the adult knows what's best for the youth. As *recipients*, young people participate in learning experiences that adults see as being good for them. However, the real contributions of young people are seen as being deferred until some later date and learning experiences are seen as practice for later life. When youth are viewed as *resources*, actions of young people have present value to the community and there is an attitude of respect focusing on building self-esteem and being productive. The Innovation Center for Community and Youth Development (2001) later added a characterization of youth as *partners* to Lofquist's original continuum. As *partners*, youth share leadership and decision-making roles with adults.

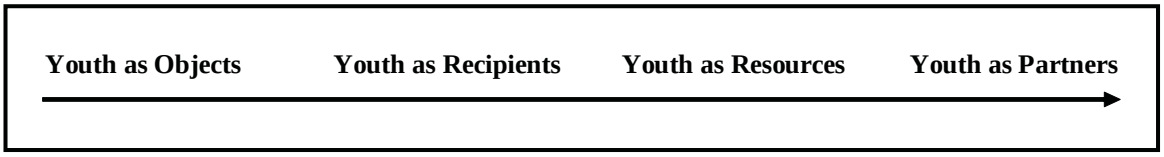

Figure 3. A Spectrum of Adult Attitudes toward Youth

The view that adults take toward young people tends to shape the nature of the leadership programs they design. In some programs, leadership is taught through formal routines that emphasize command and compliance. The leader is *in charge* and followers are objects to be directed. In other programs, youth run club meetings and organize events as practice for more significant roles in the community later in life. In these instances youth are recipients of programs designed by well-meaning adults. When programs involve young people as resources, youth grow, gaining knowledge, skills and building self-esteem from their involvement in service learning activities such as food drives and community clean-up campaigns while performing needed functions within

their community. More recently, youth have been engaged as full partners with adults in making decisions and taking actions aimed at producing sustainable and vibrant communities.

Partnership in the chapter activity planning process exists for Kentucky FFA members. Chapter officers attend the week long FFA camp at the Kentucky FFA Leadership Training Center. However, this camp is unique in that it is also targeted to enhance chapter officer leadership development and conduct chapter planning. By the end of the week, members develop the Program of Activities with the advisor serving in a true advisory role. New activities are brainstormed and members challenged to set goals of community engagement projects where members partner with the community.

If Agricultural Education is to be sustainable in developing our national future leaders, as leaders we must encourage activities that engage members in the context of community. Furthermore, youth-adult partnerships must exist. If Agricultural Educators create an environment for members to gain ownership for their own leadership development, partnership within the community benefiting both students and community will exist. In this capacity, Agricultural Education and our future leaders will be sustained.

References

Ayers, J. (1987). The Leadership Development Continuum. *Department of Agricultural Economics Journal Paper 11*(1), 813.

Lofquist, W. (1989). *The Technology of Prevention*. Tucson, AZ: Associates for Youth Development.

National FFA Organization. (2007). Retrieved online November 7, 2007 at http://www.ffa.org/index.cfm?method=c_students.ChapterOfficers

Peiter, R. L., Nall, M. A., & Rennekamp, R. (2005). *FFA Leadership: Do Activities Navigate Toward Full Potential?* Association of Leadership Educators. Online: http://www.leadershipeducators.org/2005/peiter.pdf.

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"Don't be afraid to take a big step if one is indicated. You can't cross a chasm in two small jumps."

~ David Lloyd George
1863-1945
British Prime Minister

Continued from page 26

the strength of our planet in order to allow it to meet the challenges it will face. The key is to be proactive, not reactive. Educators can lead this charge through sharing their experiences, practices, and research.

Sustainable agriculture means using practices that are designed to allow agriculture to continue to perpetuate itself. Sustainable education should mean the same thing, using practices that incite in students a desire to perpetuate their learning even after they leave the classroom.

What proactive measures do we use to accomplish this? Research has led us to many solutions and this issue is sure to indicate more, but this much we know we must do:

- Explore research-based techniques to increase student learning.
- Explore research-based techniques to increase sound environmental practices.
- Be cautious about changing students too much, let their individuality shine.
- Be cautious about changing the earth too much, let its innate beauty shine.
- Trust a learner's ability to grow and develop on the solid foundation education provided.
- Trust the environment's ability to maintain when a strong ecological foundation is followed.
- Nurture the learner within.
- Nurture the world throughout.
- Respect the learner.
- Respect the earth.
- Work for sustainable education.
- Work for sustainable agriculture.

- Believe that students are our future.
- Know that our earth is their future.

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THEME ARTICLE

Career Decision-Making for Agriculture Students' Sustainability

by Kerry Priest

Walking through the middle schools doors I was greeted with a familiar scene—little people, loaded down with backpacks and books, racing (well, kind of wandering) down the long hallways and into open classroom doors. I was there to do a presentation on agricultural careers to a class of sixth graders. In pre-teen style they were full of energy, yet cautiously suspicious, full of potential, but still awkward in their own skin. While they lived in a community that is physically close to agriculture, they—like most Americans—were far removed from the farm and first-hand knowledge of where their food comes.

We started with a word association: "What do you think of when you hear the word 'Career'? *Money, job, work, business, boring*. "What about the word 'Success'?" *Money, degree, college, rich, happy.* "Ok, and one more, how about 'Agriculture'?" *Farming* (of course), *animals, everything has to do with agriculture.* Wait, that was the point I was going to make. "How did you know that?" I asked. One boy replied, "I took agriscience last semester!"

A gold star for that agriculture teacher! And for all agricultural educators who are on the front lines every day, sharing the wonders of agriculture with thousands of young people and shaping them for career success. The future of agriculture, and the sustainability of agricultural education, is in the hands of the next generation. As we help students achieve career success, we are not only developing leaders in agriculture, but also influencing life-long supporters of agricultural education.

So how do *you* define career success? As educators, our understanding of the career development process of young people influences the career development interventions (a more technical term for "activities" or "events") that we provide for our students. And let's be honest, how many of us remember what we learned in human development or ed psych class? We aren't necessarily trained to be career counselors; yet, many agricultural education students credit their advisor as being most influential in their career decisions. When you consider the implication, that's a pretty big deal!

Career development is a dynamic, life-long process that includes career interest, choice, and performance. In other words, work matters. The average worker will change careers - not just jobs - several times over the course of a lifetime. In our culture, we tend to use "successful career" to define "success in life". We associate "work" with "worth", and when we find ourselves in a negative work situation (loss of job, indecision, or dissatisfaction), it can negatively impact our self-concept. Most people don't have a career plan or know how to make informed choices. Career decision is not an easy task. As agricultural educators, we can engage students in career development interventions that empower them to construct meaning out of their life experiences and apply them to career and life goals.

So, how do we engage in these career interventions? Traditionally, agricultural education provides many opportunities for students to participate in meaningful activities that help prepare them for careers. Leadership activities, supervised agricultural experience programs, and career development events could all be considered career development interventions. However, they will be most effective when included in a comprehensive career education plan.

The National Career Development Guidelines (NOICC, 1992) identify competencies that can help teachers and counselors identify age-appropriate goals and activities for their students. Middle/junior high students need to acquire knowledge, skill, and

awareness in the following domains:

1. *Self Knowledge*. This includes knowledge of the influence of a positive self concept; skills to interact with others, and the importance of growth and change.
2. *Educational and Occupational Exploration*. Connecting educational achievement to career opportunities; understanding the relationship between work and learning, developing skills to locate, understand, and use career information; knowledge of skills necessary to seek and obtain jobs; and understanding how work relates to the needs and functions of the economy and society.
3. *Career Planning*. Developing skills to make decisions; knowledge of the interrelationships of life roles; knowledge of different occupations and changing male/female roles; understanding the process of career planning.

It's important to remember that middle school/junior high students are in a search for personal identity, therefore career interventions should encourage students to explore feelings, needs, and questions. Teachers should provide broad opportunities to explore personal characteristics and define values, use a wide variety of methods to accommodate the wide range of individual differences in career maturity, interest, values, and abilities, and use concrete, hands-on, direct experiences. Some examples of activities to accomplish these goals include:

- Job shadowing
- Career fairs
- Interviews/Guest Speakers
- Interest, value, and skill inventories
- Connect with role models or mentors
- Engaging conversations on life roles and issues involved in career choice

In addition, teachers and students could visit the National FFA's Middle School Discovery website (www.ffa.org/students/ms), which is a great resource that allows students to explore agriscience career information.

At the high school level, students are closing the gap to the world of work, and career interventions should prepare students to go into a job. College prep courses should not delay decision making, but help the student apply and focus learning towards a potential area of further study in preparation for a career. But the reality is that most students have no idea what direction they are headed and need help sorting through their interests and abilities—as well as external factors—in order to make good decisions. High school competencies include all the middle/junior high goals, with the added need for skills to locate, evaluate, and interpret career information; seek, obtain, maintain and change jobs; and understand how societal needs and functions influence the nature and structure of work. They also need to develop the skills involved in career planning. Career planning should be individualized, rather than systematic, as each student has their own contextual influences and needs. It will be important to address internal and external pressures that students experience in making career decisions (like parental expectation, gender bias, or the cost of education).

The U.S. Department of Labor's *O*NET OnLine* (www.onetcenter.org) is a web-based application that provides user-friendly access to occupational information contained in the O*Net database. The nation's primary source for career information, users can search for and explore over 800 occupations based on their skills, then view related occupations, summaries and detailed descriptions of necessary skills, knowledge, and work activities for those occupations, as well as link to other on-line career resources. To jump-start the career search process or assist in career transitions, O*Net offers several free online career exploration tools.

As we can see, much of what we do in agricultural education and FFA provides a solid platform for career development. Helping our students achieve career success depends on more that just participating in CDEs, and SAEs, or teaching one unit on ag careers at the beginning of the semester. There is an incredible opportunity for agricultural education teachers to partner with the school counselor to develop a comprehensive career development plan. The future of agriculture depends on competent and confident young leaders who can make informed career decisions and have the skills to succeed in whatever job they choose.

References:

Herr, E. L. & Cramer, S. H. (1996). Career Guidance and counseling through the lifespan (5th ed). New York, NY: Harper Collins.

National Occupational Information Coordinating Committee (NOICC). (1992). The national career development guidelines, Local handbook. Washington, DC

Niles, S. G. & Harris-Bowlsbey, J. (2005). Career development interventions in the 21st century.

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The Key to Agricultural Education Success: Recruiting and Retaining Quality Agricultural Teachers

by Kellie Caflin

WINNER 2007 National ATA Essay Contest

"The key to our success in agricultural education is to have an adequate supply of well prepared people motivated to help prepare students for successful careers in Agriculture, Food and Natural Resources industries," according to Dr. Larry Case, Coordinator of Agricultural and Rural Education in the United States Department of Education (Case, personal communication, Sept. 20, 2007.)

This need for agricultural educators is demonstrated by the National Council for Agricultural Education (The Council) in the fifth initiative of the "10 x 15" long-range goal to establish 10,000 quality agricultural education programs by the year 2015. This initiative, "Agricultural Educator Recruiting Strategy", recognizes that the shortage of agricultural educators has been "measured, researched, analyzed and discussed for decades" (The Council 2007). Ed Osborne (2007), a member of the 10 x 15 management team, states that there will need to be an additional 4,278 agricultural teachers to reach the 10 x 15 goal. From this information we see that there is a need for agricultural education teachers across the nation; to fulfill the need we need to properly recruit and retain teachers.

The Agricultural Teachers Creed states, "I am an agricultural educator by choice, not chance" (www.naae.org/about/creed). As agriculture teachers, our challenge is how we can get students to choose agricultural education as a profession. Larry Gossen (Gossen, personal communication, Sept. 19, 2007), Local Program Success specialist with the National FFA Organization, believes that, "the key to recruiting teachers is the local teacher." Agriculture teachers have the most important role in the recruitment of future teachers. The reason I am going into the profession is my own agriculture teacher, Eric Boettcher. He truly enjoys teaching agriculture and that passion transferred through to me as a student and I became excited about agriculture. Mr. Boettcher pushed me to grow as an individual and supported my decision to become an agriculture teacher. Simply telling a student that they would make a great agriculture educator is one of the strongest recruiting tools an agriculture teacher has ("Identifying Potential Teachers" 2007).

An example of this is Roger King. Roger King became an agricultural educator because he was inspired by his own high school instructor. After twenty-three years of teaching in the Holmen School District (Holmen, Wisconsin), King still has a passion

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At the end of the day as long as we have a new generation with the passion and excitement about Agricultural Education as Kellie Caflin, our profession will continue to thrive.

Photo Courtesy B. Foster

Learning Sustainability From Each Other

by Sara Brierton

This issue's theme is Sustainable Agriculture - Sustainable Education. I would suggest these concepts are interwoven (like those braided lucky bamboo plants in the grocery store) and interdependent, supporting and growing upon each other. Sustainable agriculture is based on a balance of three ideas; each is equally important and often portrayed by a three-legged stool (Figure 1). If one leg is longer than the others the stool is out of balance and unusable. For agricultural education to be sustainable it must be viewed the same way.

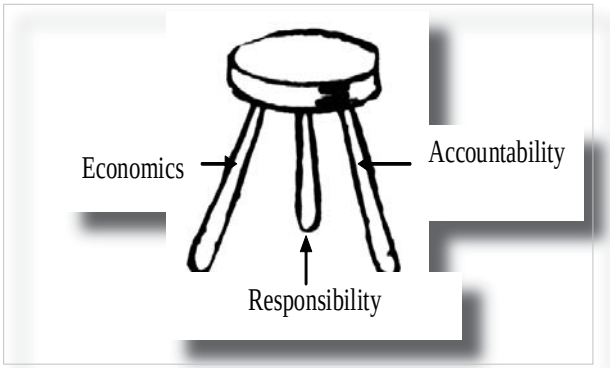

Figure 1. 3-legged stool of sustainable agriculture/education.

The first leg is economics--sustainable agriculture must be economically viable. If a farmer is losing money, he cannot stay in business for long; the same is true for education. Imagine if a group of students a particular agricultural program continued to consistently "produce" negative outcomes in terms of academic achievement and leadership development. At some point decisions must be made for the sustainability of agricultural education and consequently agriculture. Effective agricultural education costs time, resources, and money, but the return it produces is usually an employable, productive student who contributes to the fiscal and social stability of a community. If agricultural education fails to provide employable and productive students, its economic viability comes into question.

The second leg of sustainable agriculture is social accountability. Agriculturalists (e.g. the farmer) recognize that he or she is part of a community and they understand the roles, responsibilities, and compensations of the mutually beneficial relationship between a community and an agriculturalist. Educational institutions and agricultural educators should also be active partners in society. Schools should be responsive and accountable to the community, while benefiting from the support received from that same community.

Lastly sustainable agriculture must be environmentally responsible--for many this is the focus of this sustainable agriculture. However, without the other two components (social accountability and economic viability) environmental responsibility has no staying power. Sustainable agriculture is a lovely idea, but has little hope of success alone. Couldn't we say the same for sustaining agricultural education? Oftentimes emphasis, admirably, is on the academics. Academics are desperately important, but academics alone do not create educational success and longevity in an educational program of any kind. Only an educational system that is in balance with regard to fiscal responsibility and social accountability can be prolonged.

How can this balance be accomplished? What can we learn from one to enrich the other? Much talk in sustainable agriculture is about being good stewards of the earth, and encourages followers to adhere to management practices that support and develop the land and other natural resources. Shouldn't educators be stewards of their students: surely they should attend to them and care for them and contribute to what they need for them to grow, learn, strengthen, and develop?

An educational plan that lasts is one committed to being responsive and open to new trends and ideas without leaving all traditions behind. We can't do exactly what we used to do, but we must learn to carry forward what works in order to provide solid foundations upon which new ideas can take root and grow. An agricultural plan that is sustainable does the same thing—it brings proven techniques and procedures from throughout history and marries them with cutting edge research and technology that supplements and strengthens our practice. Think about your own agricultural education programs. What traditions and opportunities will sustain your program?

Is agricultural education looking to just do no harm, or is it looking to move the profession, society, and/or agriculture forward? It is not enough to just prevent students from falling behind or to maintain a *status quo*. We must improve the minds and lives of our students; we must provide them with opportunities and skills needed to meet and exceed the challenges they will face. We must do the same for the environment. Sustainable agriculture cannot be satisfied to just do no more environmental harm. We need to repair the damage done and provide avenues for improving

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THEME ARTICLE

Sustainable K-12 Agricultural Education: One Tool for Success

by Dennis Duncan & Maria Navarro

With the expansion of "sustainability" movements across the country, the plethora of definitions for sustainability continues to increase. Most popular and literal definitions include the idea of processes "that can be continued – either indefinitely or for the implicit time period of concern" (Lélé, 1991, p. 608-609). The intent of this article is not to educate the readers on the latest "sustainable" practice that should be implemented to ensure future generations the environment we currently enjoy, but to discuss how to sustain effective K-12 agricultural education programs where and whenever necessary.

Rowe (2007) argues that state education standards that focus solely on reading, writing, and arithmetic "do not relate to societal problems and solutions, and create barriers to learning about sustainability" (p. 324). One may construe that agricultural education using the "Total Program" model does not show the problems described by Rowe (2007) and truly prepares students not only in and about sustainability, but also for post-secondary education, career success, and to contribute positively to society. Agricultural educators understand the importance of connecting curriculum to societal problems, and have strived to educate and prepare future leaders to serve as stewards of the environment. The one million dollar question is, however – with the new challenges we are facing, how do we make agricultural education sustainable, and assure that agricultural education is forever valuable from economic, environmental, and social perspectives?

For the purposes of this article, the authors have chosen to use the "Diffusion of Innovations" model as presented by Everett M. Rogers (2003) to describe one process that can be used by teachers to insure sustainable agricultural education. In our case, "innovation" will be the agricultural education curriculum and/or FFA programming, and the potential adopters will be K-12 students. Rogers (2003) contends that there are five stages of innovation decision making: 1. Knowledge; 2. Persuasion; 3. Decision; 4. Implementation; and 5. Confirmation.

Knowledge happens when the student "is exposed to an innovation's existence and gains an understanding of how it functions" (Rogers, 2003, p. 169). A danger to the sustainability of agricultural education programs is to assume that this is where agricultural educators need to start. To begin, teachers must first understand the needs of the system, and then develop a "felt" need for change and knowledge among students before they can "connect" to the curriculum. Dewey said it skillfully in his pedagogic creed, first published in 1897 – "I believe that the only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself" (as cited in Infed, par. 5). For example, in teacher education programs, we can lecture and preach to our students about the importance of classroom organization and management, but most don't see the importance of this until they student teach and/or land their first teaching position – then they really make the connection. The lesson learned from mistakes made at the "knowledge" stage is that all secondary educators must perform annual needs assessments so as to paint a clearer picture of their clientele's (students, families, industry, school, community, society) needs, and the direction their programs must take to stay sustainable.

Persuasion takes place when the student "forms a favorable or unfavorable attitude toward the innovation" (Rogers, 2003, p. 169). This stage depends highly on the characteristics of the innovation. For example, positive attitudes towards agricultural education programs may be formed if teachers can show that their programs are better than other options available, are compatible with the system (e.g., with the rest of the school curriculum, with the academic and professional aspirations of the students), are understandable (students understand what will they gain and what will be expected of them), can be tried with minimum risk (students do not miss the possibility of pursuing other opportunities if they choose the agricultural education route), and are observable (the program can show positive results with other students).

Decision occurs when the student engages in an activity, often on

a probationary level. This first step will then move the individual to either adopt the innovation, or decide it is not of interest to them. The lack of adoption is often caused by a negative experience, or disconnect between the activity and the individuals needs or interests. Teachers can influence this stage by demonstrating to students the importance and relevance of the program, relating and adapting it to students' situation, context, prior knowledge, interests, and learning styles. From a curriculum perspective, pedagogical techniques such as demonstrations, hands-on learning, and multiple experiential learning processes have shown to be good allies of agricultural education programs, and need to continue to be included in our educational processes.

The implementation stage takes place when the students put the innovation into practice (Rogers, 2003). During this stage, the teacher needs to be prepared to assist students when the outcome is and is not what was expected. During this stage, problem-solving is key to successful teaching and learning, and it is imperative that teachers continually modify and refine their curriculum to meet not only the students' needs, but also the needs of the whole system. In that sense, agricultural education significantly changed after the publishing of the famous "green book" – Understanding Agriculture: New Directions for Education in 1988. The Committee on Agricultural Education in Secondary Schools Board on Agriculture of the National Research Council (1988) stated in the "green book" that "much of the focus and content of many vocational agriculture programs is outdated" (p. 2). Since then, we have witnessed how a broad spectrum of agricultural education programs across the country has moved beyond the "outdated" agricultural production curriculum used for decades in the US.

During the final phase (confirmation) students seek positive reinforcement for their "continued" involvement with the innovation. For many students, this reinforcement may be internal, but for others it may also need to have an external component, in the form of awards, election into office, or simple recognition for a job well done. If students that need external reinforcement do not feel recognized for their involvement, they may become frustrated and lose interest, and may drift from the chapter. FFA Advisors often do an exceptional job of recognizing their FFA members for participation in the local chapter, and must continue to bestow significance to these details.

If agricultural educators are to truly sustain long-term, effective K-12 educational programs that focus on agriculture and the environment, they must be ready to consistently evaluate the effectiveness and value of their programs in the eyes of their clientele, and adapt – without delay - as needed. There must always be a strong connection between curriculum and society, and the Rogers (2003) "Diffusion of Innovations" model is one tool that can be adapted to K-12 education and used to guide the evolution of agricultural education programs and the development of new endeavors. These are exciting times in agricultural education and we must not become complacent in the classroom, laboratory, or FFA arena, if we want to lead the way in addressing the challenges facing us, as well as those still ahead of us.

References

Infec, n.d. *Reproduction of J. Dewey (1897) pedagogic creed*. Retrieved December 9th, 2007 from http://www.infed.org/archives/e-texts/e-dew-pc.htm

Lélé, S. M. (1991). Sustainable development: A critical review. *World development 19*(6), 607-621.

National Research Council. (1988). *Understanding agriculture: New directions for education.* Washington, DC: National Academy Press.

Rogers, E. M. (2003). *Diffusion of innovations*, 5th edition. New York: Free Press.

Rowe, D. (2007). Sustainability: Education for a sustainable future. *Science, 317*(5836), 323-324.

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