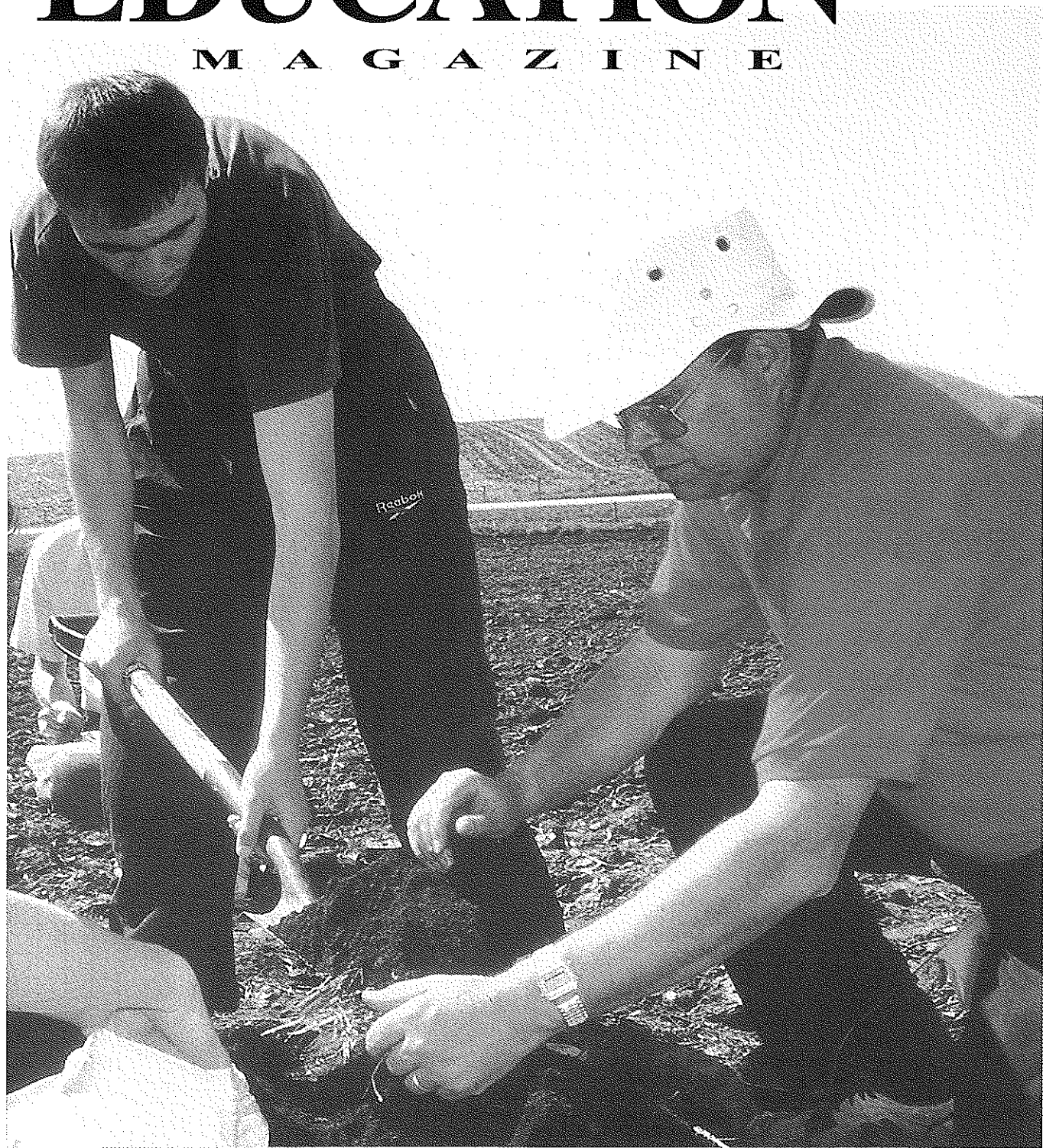


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The Agricultural **EDUCATION** M A G A Z I N E



**The Role of the Teacher in Conducting
Supervised Agricultural Experience Programs**

Mislearning from Experience: Hooked on a Feeling

By Robert A. Martin

Recently, a student returned from a six-week internship reporting that she had "learned a lot". Pressed to define what "a lot" meant to her, she said it was hard to explain, but she "felt" like she "learned a lot". Unfortunately, this conversation was beginning to make me feel a bit ill at my stomach because in the course of a two or three sentence conversation we had gone from the expected short list of "learnings" to a perceived "feeling". One would hope that this person's written report would be a bit more specific than the brief conversation we had as we passed each other in our office complex. She was probably rushing to her advisor to explain to him the extent of her learning. I can only hope.

This brief conversation got me thinking about experiential learning once again. Actually, this is a continuous thought process; our conversation only one more paragraph in a continuing story.

I am reminded of what Brookfield (1995) said in his book, *Becoming a Critically Reflective Teacher*, "While acknowledging the importance of experience, one must also recognize its potential for distortion" (p. 193). Additionally, Richert (1991) commented that "Research in cognitive psychology cautions us about the difficulty of learning from experience by suggesting [there are] numerous ways of misapprehending experience and thus mislearning from it" (p. 113) (IN Brookfield, 1995, P. 193). I would venture a guess that the misapprehending and mislearning could come from a lack of planning the experience. Of course, there is the possibility and even the likelihood that unplanned experience can be enlight-

ening. However, unplanned learning strikes me as haphazard and unpredictable, regardless whatever the merits of unplanned discovery may be. I like to think of those unplanned "learnings" as icing on the cake of experience while the learner was in the process of conducting an organized plan of experience. After all, life is often what happens while we plan something else. It's often the gap between what we plan and what is. This in no way puts down planning. If anything, it elevates planning to a new level. If we don't plan for an experience, we would never be in the position to discover the unpredictable.

The purpose of the "organized" plan of experience is to facilitate a learning environment, not just wait for it to happen. In facilitating the learning environment, one would be encouraged to "think" about learning, "plan" the learning, "conduct" the learning and "reflect" on the learning.

For these steps to happen, it seems logical that we help all students to follow a specific set of procedures if Supervised Agricultural Experiences (SAEs) or Career Experiences in Agriculture (CEAs) are to be successful. That is, after all, our role. Consider the ten steps to success in the following list.

Ten Steps to Successful Career Experiences in Agriculture or SAEs

1. Identify a goal for the learning experience
2. List the performance objectives
3. Outline the expectations of all parties involved
4. Conduct the learning experience
5. Plan for self-assessment
6. Obtain supervisor input/suggestions

7. Seek teacher/instructor assessment
8. Reflect on the experience
9. Draw conclusions
10. Identify, specifically, what can be used from the experience (transferability)

The ten steps for successful SAEs or CEAs remind us that our role as teachers and practitioners of experiential learning is to make sure the experiences are planned, organized and purposeful. We must do this if we are to gain support from significant others for their continuation. Only then can we be sure that students "learned a lot". Learning is more than a feeling. Learning must be confirmed and validated.

The authors in this issue have some great ideas supporting the role of the teacher in supervised experience. Thanks to all who contributed to this issue of *The Magazine*. Special thanks go to Dr. Michael Woods for serving as theme editor.

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Authors writing for the May-June issue of *The Agricultural Education Magazine* discuss the critical role of the teachers in SAE activities. Experiential learning is the key to successful education in agriculture. (Photo courtesy of College of Agriculture, Iowa State University.)



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Article Submission

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Keeping it Real!

By Michael Woods

As we prepare today's agricultural students and FFA members for the future we often find that our textbooks and curricula are not in tune with current, real world problems. The agricultural and natural resources sector is changing so rapidly that even industry professionals are challenged to keep up with new information. We know that today's students will face many challenges in their lifetimes and the authentic learning offered via the Supervised Agricultural Experience (SAE) program can better prepare them to meet these real world challenges.

How do you see your role as a teacher in conducting SAE programs? Are you an instructor? A guide perhaps? Is your role to facilitate your students' learning or is it to control what they learn, releasing pearls of wisdom to them one by one from your personal treasure chest of knowledge? Or do you regard yourself as a manager, organizing your students' time and activities? The reality for many agricultural teachers will probably be that they adopt most of these roles at some stage, either

within a single SAE visit or within their overall role in conducting SAE programs. Different situations demand different solutions, and challenges arise when an inappropriate solution is applied to a particular situation.

It has been my experience that these challenges cause even the best agricultural teacher to stop and question how anyone can function effectively in such a situation. But many have and continue to do so.

Articles in this issue of *The Agricultural Education Magazine* tackle these overriding and sometimes overwhelming challenges that agricultural teachers encounter in conducting SAE programs. Specifically, the authors illustrate the multitude of daily executive decisions that agricultural teachers contribute to a student's SAE, and offer excellent suggestions, ideas and practices to advance your role in conducting SAE programs.

Nevertheless, in spite of all your education, training and dedication, sometimes it may feel as though you are on auto-pilot, taking action without taking time for thoughtfully planned rationales and interventions. On such days, you may be working in the mode described by Judith Guest in her book, *Ordinary People*, "Get the

motions right and the motives will follow."

It is my hope that this issue serves to shut down the auto-pilot and challenge you to reconsider your motives, which will then set the scene for your motions to advance your role in conducting Supervised Agricultural Experience programs.

Special thanks and appreciation go to all authors who submitted articles for this issue of *The Agricultural Education Magazine*. The suggestions, ideas and practices presented by these authors will truly enhance agricultural education's position as a premiere educational delivery system. In addition, the articles will help align your activities and programs with the vision and directives as outlined in the *Reinventing Agricultural Education for the Year 2020* report by the National Council for Agricultural Education. In implanting these suggestions, ideas and practices, you showcase your aspiration to excellence in preparing young people by developing their potential for premier leadership, personal growth and career success through Supervised Agricultural Experience programs.

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September - October 2003, Issue

The Role of the Teacher as a Facilitator of Learning.

Is teaching just about delivery or is it all about facilitation?
Who has responsibility for learning? How can teachers of agriculture improve learning by their students?

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SAE - An Important Part of the Curriculum

By Brad Bryant

The SAE concept is one of the unique characteristics that separates Agricultural Education from other subject areas. We all know that SAE has many purposes and objectives that benefit our students by challenging them to gain new skills and experiences. Convincing students to begin this journey because they will improve their education will not suffice as a motivating tool. Improving employability and life skills by participating in an activity that combines the three domains of learning won't be seen as inspiring, either. First year students aren't thinking about building a resume and few have made definite decisions on a career path. The main motivational factor for participation is recognition through the FFA.

The second motivator is that SAEs are promoted and supervised by one of the greatest role models a student will ever have - their agricultural education teacher. Whether you recognize the three intersecting bubbles or the triangle where each side supports the other, SAE, FFA and Agricultural Education are integral to the success of each aspect.

SAE should be a curriculum area that is taught in every agricultural education course. The first years of agricultural education are the best times to teach about and promote SAE. Middle school, where applicable, and the first year of high school are critical starting points for influencing impressionable minds.

The end result of winning a state or national honor may be a good starting point. Working backwards from there, the teacher should highlight the current and growing list of proficiency awards along with the meanings of each, degrees of membership, and review other individual

opportunities offered through the FFA. Record keeping, with examples of positive cash flow, is also encouraging. Students should know the differences between the proficiency award divisions of 'placement' and 'entrepreneurship' and the timeline needed to be successful at the state and national levels.

Students will be able to tell early that wide ranges of options are available to them. Types of SAE could include:

- * AgriScience and Technology
- * Agribusiness and Agri-entrepreneurship
- * Agricultural Production
- * Exploration and Skills
- * Improvement
- * Outdoor Management
- * Agricultural Specialty Areas

Students should realize that SAE opportunities available to them today have changed since their father's SOEP or their grandfather's "project." Even though the SAE options that were available 25 years ago are still viable objectives, FFA recognition opportunities have grown and diversified dramatically in reaction to agricultural trends. A student with a family history of farming, for example, still has production proficiency and star farmer awards available. Students without access to production or placement may find their niche in a specialty area such as communications, agriscience, or community improvement.

That's right, participation in the AgriScience Student Recognition and Scholarship Program and agriscience fairs are SAEs. They are supervised, they are agricultural, and they are definitely experiences. The FFA has even catered the Star awards to include agriscience for the Chapter, State, and American FFA membership degrees. Students should not be limited to their specific resources. Maybe the student with a farm

background will develop a national winning agriscience project or create a non-farm entrepreneurial interest.

As students progress through the program, subsequent years of SAE instruction should include advanced record keeping, goals and objectives of the enterprise, skills attained, and growth. As far as SAEs in the proficiency area is concerned, students should start working on the award application as early as the second year. The same suggestion can be given for starting State and American Degree applications. Students should be reminded that much importance is given to setting goals, developing skills, completing objectives, and resume building.

Both students and teachers should remember that SAE is a process, not an afterthought when completing award applications during the student's senior year of high school. Showing progress in the chosen area is the key sign of success.

SAE blends the old and the new. It maintains an importance on production, the backbone of agriculture, while reaching out to new audiences with interests in science, technology and agricultural specialty areas. Following the process of showing students the end result of a state or national FFA award, then working toward that goal, may be the reassuring edge needed for success.

Guiding students through one or more SAEs takes time, energy, and vision. Seeing students initiating a plan for a SAE and exploring new skills is also highly motivating for all involved. Although these are student experiences with many key players, the beginning to end success is highly dependent on one person and role model, the agricultural education teacher.

Brad Bryant is an Assistant Professor in Agricultural Education at Virginia State University.

Enhancing the Teacher's Role in Facilitating Supervised Agricultural Experience Programs

By Rick Bockhop

Contextual teaching and learning using SAEs (Supervised Agricultural Experience) can be challenging. Using collaborative efforts, combining resources of students, teachers, parents, administrators, and other stakeholders to increase student-applied knowledge, as outcomes of objectives through SAEs is important. Agricultural education principles are continually linked to what I believe is one of the corner stones of Agricultural Education: SAEs. I believe that the embedded messages in this process have value with reflection of each person's experiences, creating new levels of cognition as a process that enhances an agricultural education program.

As teachers face challenges of enrollment, additional demands, including time, facilitating effective methods addressing SAEs is essential. Questions that need to be addressed related to SAEs are: What can teachers do to improve the quality of SAEs within Agricultural Education? What can be done to enhance objective based outcomes through SAEs within the classroom while enhancing SAEs on site?

The value of SAEs is embedded in many of the program principles in agricultural education. SAEs have transferable values within education, aiding students with life skills. This process is based on using SAEs as a long-term teaching approach with each student in an effort to efficiently use available time. As you read and reflect, please record experiences that you may have been involved with in an effort to create SAE objectives that may be applied

in the program you are directing.

Beginning as a new teacher in agricultural education during the late 80's involved many aspects of SAEs. I was overwhelmed by the entire SAE process. I was supported and aided by my administrator and principal both of whom were former agricultural educators. Their help was very much appreciated, but some of the most valuable suggestions came from agricultural education teachers in neighboring schools. I know most of us have a special individual, or group of individuals that helped us get through the challenges of those first months of teaching. As I reflect the individual who made the difference at that point of my life was Dean Deuschler, who facilitates a great agricultural education program himself.

Dean's diverse involvement with SAEs and students exposed me to new techniques as I worked to apply many of his SAE program ideas and principles. I used Dean's ideas, applied them to my experiences, combined with information I was formally presented earning my degree as I began my application of SAE's in Agricultural Education.

The following are a few experiences that helped me integrate ideas, principles and objectives into the SAE program I facilitated:

Attending local agri-business meetings and events, ie. such as service and marketing co-op meetings. These meetings connected many of the activities students were using as inputs and outputs during their SAE. These meetings supported classroom objectives while creating community interest. Additionally, they generated good public relations among business leaders and

community members.

Visiting area farms especially during agricultural classes. Farms that were visited during class many times included students in agricultural education. Students with SAEs on these farms were able to share information about their activities involving various areas of interest with others. This process many times motivated other students as they considered developing SAEs with similar values. This activity allowed me, as the instructor, an opportunity to demonstrate the values of site visits as related to the agricultural education program. Opportunities for picture taking involving students and their SAE for a classroom display and/or award applications were a bonus.

Field trips including CDE's. Areas that were affiliated with students' SAE have enhanced the total experience. Ideas were many times shared as new knowledge was acquired. The use of field trips can easily relate to lesson objectives. Accountability can be illustrated as it becomes more difficult to include field trips with the curriculum.

Applying new technology in theory with research, ie. setting up research projects with feed, seed, and chemical businesses on-site. Establishing real world application as shared information contributes to successful achievement of objectives. Sharing SAE information with fellow students is a hands-on approach.

Preparing, writing, and presenting reports relating to the student's SAE's. Using class presentations to demonstrate and

establish the value of SAEs, while allowing students to develop communications skills in public speaking is beneficial in many ways. This activity develops student responsibility, allows focus on an interest, motivates, recognizes accomplishments, utilizes media, and creates unlimited possibilities with new potential for levels of achievement. Students present their SAEs in class on a scheduled day each week. This activity could be each Friday to begin a lesson. Students and instructor may indicate suggestions as presentations are evaluated as a part of the agricultural education program. Questions concerning the individual's program may stimulate class members to pursue similar SAE's.

Completing proficiency and degree applications. Include this activity during regular scheduled classes. Directed learning can take place while supporting objectives that are key in agricultural education. Students learn many SAE management techniques and this approach allows them to share.

Viewing other SAEs in groups of 2-3 students with the Agriculture Teacher. After school, before school, during prep time, load up a group of students and share the SAE experiences. Situations like these can lead to many great experiences as students visit SAEs of varying levels. Students will benefit from the experience and many times suggest ways the SAE may be improved.

Relating new technology and current events to SAEs within lessons. Use examples of SAEs that students have during lessons. Student interest is generated while connecting information to the real world.

Including SAE on bulletin boards/web pages, other media. Create a student-designed bulletin

board displaying several SAEs each month. Place a small abstract on a web site regarding individual SAEs including pictures.

This list should allow each of you to add many experiences to a list of SAE objectives. These objectives enhance hands-on, directed learning objectives in and out of the classroom.

Each activity is unique and has value. As educators we continue to use ideas that enhance the educational process. The principles of Agricultural Education continue to increase as agriculture teachers become more diversified. A key to applying SAEs to new areas and involving more students will be dependent upon many principles. These principles need to support curriculum as they allow new levels of achievement to be reached. SAEs allow each student learning opportunities, which are nearly impossible to replicate in class, as they gain experience and skills.

A number of items are worth considering as we continue to make agricultural education experiences valuable. Beginning SAEs at an understandable entry level is very important. SAEs are certainly not all simple and as students gain interest,

learn new skills, and develop management skills, new challenges will augment each student's abilities. SAEs make significant contributions and students need to build SAEs with objective-based understanding and clearly defined goals. Parent involvement is essential as each student's responsibilities increase.

Build SAEs from what is known, share experiences as they relate to the past, present, and future. This approach could easily be done with a step-by-step process. Planning these steps with students is a valuable experience as SAEs are integrated into the agricultural education program. Call a neighboring agricultural educator and limit the conversation to SAEs. Agricultural educators have great ideas. Borrow a few, try them out, adjust them to your area and share the results.



Rick Bockhop is an Assistant Professor in Agricultural Education at the University of Wisconsin - Platteville.

"To be successful in today's world of work, students need practical skills, many of which can be learned only through hands-on, work-based situations. The strength of your program rests on your commitment to developing opportunities for students to build these skills through the work-based learning element of agricultural education - supervised agricultural experience programs."

~ Local Program Resource Guide 2001-2002 CD-ROM

Reframing SAE: The Tricycle Principle

By Michael S. Retallick

Supervised Agricultural Experience (SAE) is one of the true trademarks of every agricultural education program. Without such a component, agricultural education faces the risk of losing its identity and purpose in the secondary school system.

There are many positive attributes associated with SAE. It is considered to be important because it improves learning, student personal development, and occupational development (Newcomb, McCracken, and Warmbrod, 1986), all of which are part of a comprehensive agricultural education program (Phipps and Osborne, 1988).

SAE is "characterized as agriculture-based, supervised, experience-centered, and individualized to meet the needs of [today's] diverse student clientele" (Barrick et al., 1992). SAE blends theory and experience to make the student's education relevant and meaningful (Phipps and Osborne, 1988). Not only do students benefit from the SAE experience, so do the teachers, employers, agricultural education programs, communities, and agricultural industry (Barrick et al., 1992).

At face value, these positive attributes can sell anyone on the importance of SAE. In reality, however, SAE is faced with its own set of challenges. The *Handbook on Supervised Agricultural Experience* (Barrick et al., 1992) even states that SAE is one of the most important, yet most challenging aspects of a complete agricultural education program. Teachers fully support SAE conceptually but fail to completely implement it in practice; in part, because participation is lacking by all parties (Dyer and Osborne, 1995, and Steele, 1997). SAE programs often lack

definition, focus, and direction because of the changes in the curriculum from a total focus on agricultural production to more diverse aspects of agriculture (Dyer and Osborne, 1995). Dyer and Osborne (1995) stated that this curriculum shift has resulted in diminishing teacher satisfaction with SAE programs. Consequently, Agricultural Education is in a dilemma and what is needed is "a comprehensive overhaul of thinking about and practice of SAE." (Steele, 1997).

With these concerns in mind, we must reframe our perception of SAE. Part of the problem is that we continue to frame SAE around easy and well defined constraints of production agriculture and placement in production. These types of SAE fit neatly into the traditional framework of a project that is continual, expandable, and, most importantly, recordable. These types of SAE are the ideal "record book project."

The record book project is exactly the perception that we must be pulled away from because it limits the SAE opportunities of students. Camp, Clarke, and Fallon (2000) suggested that the scope of agriculture has grown and changed remarkably in the past 50 years. The broad scope of agriculture suggests that the SAE concept must be altered to meet the demands of interested students.

This diverse and enlarging scope of agriculture is what has challenged teachers on the local level. The challenge has caused many to give up on SAEs or limit them to only a few students that fit the traditional SAE mode. This selective process of only working with a few students, if any at all, on an individualized SAE program could mark the beginning of the end of secondary agricultural education as we know it and have defined it.

The death of secondary agricultural education may seem fairly

extreme and radical to many. However, in the age of educational reform, accountability and individual choice without individualized, student-centered instruction through SAE, agricultural education programs could be terminated in most secondary school systems. Without SAE, an agricultural education program offers only the classroom instruction and personal development components.

In the classroom, agricultural education is currently working hard to align itself and its curricula with the accountability measures of math, reading and writing. Agricultural educators say that agricultural education can provide additional opportunities for students to develop these skills and, therefore, support the students and school district in obtaining higher achievement scores. Premier leadership, personal growth, and career success are attributes that the National FFA Organization uses to adequately describe the personal development component of agricultural education.

What if one was to look at agricultural programs with only curricular and personal development components from several other viewpoints including administrators, math and science teachers, school board members, counselors, legislators, and some community members? Isn't the agricultural education program in your district duplicating what is being done by other academic units and other extracurricular programs within the district?

Why couldn't the math and science departments include agricultural concepts and materials into what each is teaching? Why couldn't students develop the needed interpersonal skills from other well established programs within the school system like athletics, drama, speech, forensics? Why should we duplicate these services in our school system? Why

should we be providing supplemental pay or extended contract days to our agricultural instructors? What is it that really makes agricultural education a unique component of our secondary educational system? It may be only a matter of time in this era of accountability and inadequate funding that these types of questions could be raised within school districts.

In those school districts where the agricultural education program is well balanced with the three components of agricultural education, these arguments are more defensible. SAE is the one aspect of the agricultural education program that has not been successfully replicated by any other academic program to date. Many have tried and some have realized only moderate and sporadic success.

SAE cannot be abandoned by agricultural educators or the profession as a whole. Instead, the tricycle principle should be adopted. Through the tricycle frame we, as agricultural educators, can successfully move forward with the three components of agricultural education strongly intact and defend the argument of duplication.

The front wheel of the tricycle is that of classroom and laboratory. It is the curricular needs of the student that should steer and direct the entire agricultural education program. One

of the rear wheels of the tricycle is FFA and the other is SAE. Both are needed equally to maintain the balance of the agricultural education program. FFA and SAE should follow what is transpiring in the classroom and laboratory, providing support, experiential and active learning for all students.

It is the balance, like that of a tricycle, of the three components of agricultural education that makes agricultural education a vital component of secondary education in the United States.

When all of agricultural education gets to the point that the curricular and academic needs of the students drive what is being taught in the secondary agricultural education classrooms and these needs are being adequately supplemented with FFA and SAE activities, we will have successfully achieved the purpose of agricultural education.

The tricycle frame will allow us to reframe agricultural education as it strives to meet the needs of today's students and today's teachers. As educators, we must move past the perception of SAE as record book projects for those in production agriculture and toward the point where "SAE is the planned, supervised application of agricultural principles and concepts [where] SAE opportuni-

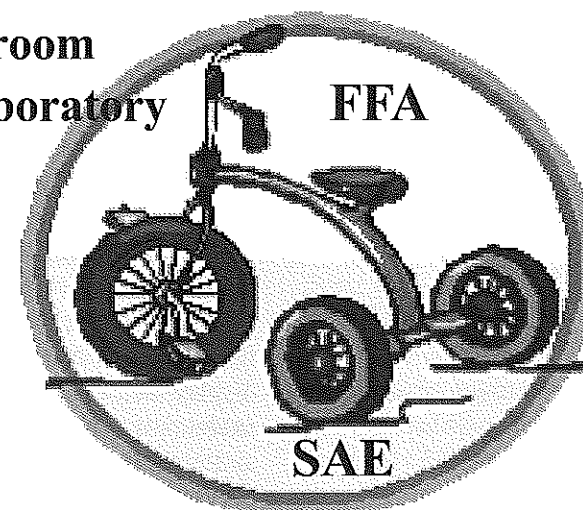
ties should serve to improve agricultural literacy and skills and abilities required for careers in agriculture" (Camp, Clarke, and Fallon, 2000).

It is through the balance and direction provided by the tricycle principle that agricultural education can maintain its identity and its purpose in secondary school systems.

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Classroom & Laboratory



The Tricycle Principle



Michael S. Retallick is the Coordinator of Academic Advising and Undergraduate Programs in Agricultural Education and Studies at Iowa State University.

Middle School SAE: The Teacher's Role

By T. Grady Roberts

Historically, comprehensive agricultural education programs have consisted of classroom instruction, FFA, and SAE (Phipps & Osborne, 1988). However, the role of these three components, specifically SAE, in a middle school agricultural education program is less clear. The purpose of this article is to outline the teacher's role in incorporating SAE programs into middle school agricultural education curricula.

As middle school students enter an agricultural education class, they find many new and interesting opportunities that are nonexistent in other academic areas. One such opportunity is SAE programs. Just as with high school, middle school SAE programs can be invaluable by extending classroom instruction to individual experiences relevant for each student (National FFA, 1996). Eight categories of SAE programs have been proposed for high school students (Camp, Clarke, and Fallon, 2000). However, only three of these categories are appropriate for middle school. These are exploratory programs, agriscience programs, and entrepreneurship programs.

Most middle school students do not have definite career goals; as such they are actively exploring many career possibilities. Therefore, one type of SAE program appropriate for middle school students is exploratory in nature and focuses on either career exploration or agricultural literacy (National FFA, 1996). This type of SAE program allows students to expand their knowledge of agriculture and agricultural careers. Another SAE program suitable for middle school students is an agriscience or

research project. Through this type of SAE program, students can apply scientific principles to agriculturally related topics and present their project at an agriscience fair or to their class. The final type of SAE program appropriate for middle school students is an entrepreneurship program focused on career preparation goals relevant to the student's career interest. This SAE will allow students to apply content learned in class.

Regardless of which type of SAE programs are undertaken, it is important to remember that the 'S' in SAE stands for supervision. Supervision is primarily the responsibility of the agriculture teacher and, secondarily, the students' parents (Dyer & Williams, 1997). Prior to incorporating SAE programs into the middle school agricultural education program, several questions should be answered (National FFA, 1996). These include:

- ✦ Will all students be required to have a SAE program?
- ✦ What type(s) of SAE programs will students have?
- ✦ What are the minimum standards for SAE programs?
- ✦ How much time will students be required to invest?
- ✦ Will there be a minimum number of activities required?
- ✦ What type of record keeping will be required?
- ✦ What percentage of the course grade will be determined by SAE?
- ✦ How will the programs be supervised?

These questions lead to the roles that middle school agriculture teachers take in utilizing SAE programs in their agricultural education curriculum. These roles include explanation, exposure, encouragement, and supervision.

Explanation of SAE

During the first few weeks of their enrollment, it is wise to conduct a unit of instruction on SAE, so that students may gain a better understanding of the concept and scope of SAE programs (National FFA, 1996). The main focus of this instruction should be on the types of SAE programs. However, explaining SAE is not limited to students. Given the role that parents play in a SAE program, it is also necessary to make sure that parents have an understanding of what SAE programs are, the expectations for students, and the expectations of them. This can easily be accomplished with a brochure that students take home for their parents to read and sign.

Exposure to SAE Programs

After students have a thorough understanding of SAE programs, the next role of the agriculture teacher is to expose students to exemplary examples of SAE programs (National FFA, 1996). Several possible ways exist for accomplishing this task. If older students have ongoing projects, they can share their SAE program with younger students. This could be as simple, such as a poster or short presentation, or elaborate in the form of a SAE showcase or agriscience fair that allow many students to display their program. If older students are unavailable, descriptions and pictures of previous student's SAE programs can achieve the same result.

Encouragement to Begin SAE

Students are now ready to begin their SAE programs - they only need encouragement from the teacher. If SAE programs are required of all students, the encouragement can be formal with grades given for implementing a SAE program. However, if SAE programs are optional, this encouragement can be informal, such as a few encouraging words in class. Regardless, student participation and success with a SAE program is directly attributable to the teacher's actions. If the agriculture teacher is not emphatic about SAE programs, the students will not be either.

Supervision of SAE Programs

As with SAE programs in high schools, the teacher should take an active role in supervising middle school SAE programs (National FFA, 1996). This process begins with developing a plan involving the student, the teacher, and the parents. This plan should include the activities to be accomplished, the dates that they should be accomplished by, and the types of assistance required from the teacher, parents, and others. During the planning, the method of grading the SAE program should also be clearly outlined with the student. This plan should be written and signed by the student, teacher, and parents with copies going to all three.

Supervising the middle school exploratory and agriscience SAE programs is different than traditional high school programs (National FFA, 1996). For exploratory and agriscience programs, fewer on-site visits are required. Supervision can be accomplished in class through record keeping or student presentations. However, if students have an entrepreneurship program, on-site visits will be required. It is important to remember that teacher supervision is directly related to SAE program quality (Dyer & Williams, 1997).

Incorporating SAE Programs

The following suggestions will help middle school agriculture teachers successfully utilize SAE programs in their curriculum.

1. Develop a thorough plan prior to incorporating SAE programs using the questions listed at the beginning of this article.
2. Encourage SAE programs that can be completed within the term that students are enrolled in an agriculture class.
3. Incorporate SAE programs into class time, possibly providing weekly time for record keeping or student presentations.
4. Although important, record keeping should not be the primary focus of middle school SAE programs.
5. Adequate supervision is critical, so encourage SAE programs that will be easily supervised within the agriculture teacher's available time.
6. Involve parents in planning and implementing SAE programs.
7. Develop a system for recognition of all SAE programs in the local agricultural education program, such as an agriscience fair or SAE fair. If room exists in the classroom, students may create posters to display important components of their SAE program.
8. Collaborate with other middle school agriculture teachers to share ideas and successful strategies.
9. If opportunities exist, encourage students with outstanding SAE programs, such as school science fairs, state agriscience fairs, or proficiency awards.
10. When implementing SAE programs into a middle school agricultural education program, start gradually and set realistic goals for the types and scope of individual student programs.

In conclusion, as with high school agricultural education programs, SAE programs are an important component of the middle school agricultural education curriculum. Providing students with an opportunity to apply concepts learned in class and gain experience with a topic of their interest is an invaluable educational tool. Not only will students learn from their SAE program, they will bring experiences to class that will make classroom instruction more relevant and contribute to the overall educational experience of the class. Therefore, along with classroom instruction and FFA, SAE programs should be an important part of middle school agricultural education. However, it is up to the agriculture teacher to make SAE programs an important part of the total agriculture program.

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Sand Dunes and Dune Buggies: A Directed School Laboratory SAE

By Jon W. Ramsey, Chris Kelln and M. Craig Edwards

“Education, in order for it to accomplish its ends both for the individual learner and for society, must be based upon experience – which is always the actual life-experience of some individual.”

~ Dewey, 1938

The sand stretches on for miles while the glare of the sun reflects off of chrome wheels and roll cages. Red pendants on whip antennas signify the location of another buggy as it makes its way across the dunes of the “Little Sahara” State Park. This is a familiar sight in Waynoka, Oklahoma.

The state park is a key source of revenue for this town of 800 in northwestern Oklahoma. The tourist trade supports several retail businesses and restaurants catering to the dune-related activities that occur at the park. One of the businesses, B&S Buggy Shop, in cooperation with the Agricultural Education Department created a directed school laboratory experience (Camp, Clarke, & Fallon, 2000) for Waynoka agricultural education students.

Challenges in the 21st Century

According to Hughes (1992), “changing family structures and shifting student demographics are reflected in the enrollment of agricultural programs” (p. 9). Single parent homes, shifting student demographics, and fewer agriculture-related jobs are

just some of the challenges that agriculture teachers face while assisting students with supervised agricultural experiences. In some states, researchers (Baggett-Harlin & Weeks, 2000; Dyer & Osborne, 1995) have found that less than one-half of students enrolled in secondary agricultural education reported carrying out a SAE.

These and similar findings must be recognized and confronted if agricultural education is to maintain its position as a leader in the use of experiential learning as an effective teaching tool. Agricultural education’s ability to offer modern and meaningful supervised agricultural experiences (SAEs), as a viable component of its learning model (Dyer & Osborne, 1995), may be of primary importance if it is to remain an attractive elective course offering for many students.

According to Camp et al. (2000), directed school laboratory experiences are an innovative answer to the SAE-related challenges that face many agriculture teachers. The directed school laboratory is a teacher supervised, hands-on, student developed project that allows real world experience in agriculture and/or agriculture related areas. In contrast to most SAEs, a directed school laboratory enables students to meet the criteria for an effective SAE, while taking place during the school day and in school facilities. It, too, allows students the opportunity to receive academic credit as well as be recognized for accomplishments made related to their directed laboratory experience (Camp et al., 2000).

Many agricultural instructors lament that it seems to be getting harder to engage all students in a

productive SAE. In response to this challenge, a collaborative agreement between the agriculture department and a local business, B&S Buggy Shop, was developed in Waynoka. The owners are long time supporters of agricultural education. They employ an agricultural education student and are very familiar with the local program. Knowledge of the agriculture program, and their desire to help it, provided impetus for the dune buggy project.

Student and Community Synergy

Three different agricultural education classes were involved in this project, including a total of 24 students. The students received individualized and cooperative, real-life experience in the context of agricultural mechanics, i.e., welding, internal combustion engines, automotive wiring, and brake and fuel systems. They learned and applied skills that culminated in the construction of a dune buggy.

Pals (1989) reported that the benefits students derived from SAEs could be identified in five areas: “(a) promoted acceptance of responsibility; (b) developed self-confidence; (c) provided opportunity to learn on [their] own; (d) developed independence; and (e) learned to work with others” (p. 20). Results from the Waynoka directed school laboratory project support Pals’ findings. In addition, students exercised team building and marketing skills. In fact, the project even had townspeople stopping by the school to check its progress and to observe students at work. The public relations and community involvement generated by this cooperative learning project is ongoing. Constructing the dune buggy was a good project on multiple levels.

The students, superintendent, principal, and community business owners were involved in planning and implementing the project from the beginning. The application of agricultural skills and principles was facilitated throughout the project by the agricultural education instructor, while the buggy shop owners provided project-specific training, skills, and advice. Students were allowed real world opportunities to apply and reinforce the skills and knowledge they were learning in the context of agricultural power and technology, skills that hold potential for increasing their future employability. In fact, one of the students is currently employed at the B&S Buggy Shop.

Additionally, the Waynoka FFA Chapter gained visibility and recognition for the dune buggy project at their county fair, at an area car show, and at the State Fair of Oklahoma. The buggy was sold at a profit. Plans are being developed for a similar directed school laboratory SAE in the future.

The Evolution of SAE

The rapidity of technological change continues to accelerate. Inherent to adoption and implementation of new technologies is the preparation of citizens who possess the capacity to become increasingly efficient and productive. Agricultural education is not immune to this phenomenon. Agriculture students must undergo learning experiences designed to prepare them to meet the human capital needs of a modern food, fiber, and natural resources system. Accordingly, as the agriculture industry changes and more non-traditional students enroll in agricultural education, SAEs must adapt to meet the needs of a new generation of students (Camp et al., 2000).

With a foot in the present and an eye toward the future, components of what makes SAE an effective and valuable learning strategy must be

reconsidered and even recast. Factors to consider may include the following: planning and implementation of SAEs; the role of adult supervisors and/or student interaction with other experts; its basis in the context of agriculture, food, and the environment; the keeping of records or other forms of documentation and reflection (e.g., journals and portfolios) by students; and, project designs that provide for the application of principles and concepts learned in agricultural education courses (adapted from Camp et al., 2000).

How students of the future relate to the phrase, “I believe in the future of agriculture,” may be dependent on the “real world” connections that agricultural educators assist them in making and understanding. One of the best tools available is the supervised agricultural experience. The students in Waynoka made real world connections to agriculture because of their directed school laboratory SAE.

Conclusion

Miller (2001) asked the question: Why have experiential programs? He concluded that, “The answer is simple: to promote real learning by students” (p. 13). However, the changing needs of students and society demand that we constantly evaluate the “real learning” experiences provided in agricultural education.

Agriculture is changing and, therefore, the types of learning experiences that students receive must change as well. To this end, the sand dunes of “Little Sahara” State Park in Waynoka, Oklahoma coupled with the innovativeness of local school officials and community members provided students a directed school laboratory experience that met their learning needs while also meeting the criteria set

forth for an effective and meaningful SAE (Camp et al., 2000; Miller, 2001; Pals, 1989). Agricultural educators must continue to “re-think” the purpose and value of SAEs in the context of the 21st century, especially as it relates to the learning needs of today’s students and tomorrow’s careers.

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The Supervision Challenge

By Parker Bane

“What do you want to do, come to my house and watch TV with me?” Unfortunately, this statement was not taken from a conversation between two buddies trying to plan their weekend. This question was the response by a high school student when a student teacher was trying to set up a home visit to help build rapport and discuss the student’s Supervised Agricultural Experience program. The home visit is one of many tools that an agricultural educator can use to help students build SAE programs. However, with more and more responsibilities being added to the job descriptions of agricultural educators every day, finding the time and means to implement many of these tools is becoming an ever-increasing challenge.

The Teacher Challenge of SAE

In many cases, teachers are seemingly forced to focus so heavily on classroom and FFA activities that SAE becomes something of an afterthought. Because of time constraints, limited resources, and the changing face of education, the teacher’s role in the SAE has become somewhat obscured. However, the S in SAE still stands for Supervised, and while there are an infinite number of directions that the supervision can go, areas in which teachers assist students in SAE programs are “record keeping, encouragement, summarizing SAE records, teaching skills, and helping students set educational goals” (Williams, 1984). In some way, shape, or form, all students that conduct a SAE program should receive assistance in these areas from the supervising teacher.

Research on SAE

However, with the potential implications of supervision, one must call into question the value of SAE as a learning tool. Many studies over the years have shown positive correlations between SAE programs and student achievement (Cheek, Arrington, Carter, & Randell, 1994; Dyer & Osborne, 1996) motivation (Camp, Clarke, & Fallon, 2000), and work habits and responsibility (Stewart & Birkenholz, 1991). Even if one were to disregard this evidence, disputing the value of what a student can potentially learn from a SAE program is difficult at best. The major question then becomes “How involved does the teacher need to be in the SAE process?” Hoover and Arrington (1994) concluded that high quality SAE programs depend on (1) teacher supervision; (2) teacher understanding of SAE; and, (3) teacher commitment to teaching about SAE in the classroom.

Teacher Roles in Supervision

Agricultural educators can improve their role in the supervision of SAE projects through three practical actions: (1) selling SAE to students, (2) developing strategies and resources to evaluate and manage SAE programs, and (3) scheduling the time to make home and jobsite visits.

Selling SAE to Students

Selling SAE to students is perhaps the trickiest endeavor that an agricultural educator will ever undertake. New agricultural education students will most likely have no clue what SAE is, let alone how to start one. Therefore, teachers must “sell” the concept of SAE to their students. Selling SAE to students is a lot like selling cars. First, you have to convince students that they need

or will benefit from SAE. Then, from an abundance of possibilities, you have to find them an acceptable “model” that fits their needs, interests, and resources.

As there are different types of car buyers, there are different types of students to buy into SAE. Car salespersons have loads of information to present to consumers on the automobiles they sell, such as literature, reviews, Internet reports, and samples.

For those that are not motivated by the numbers, but by the rumble of the engine, savvy salespersons know that they can reach their customers by taking the car for a test drive and enticing consumers with the thrill of speed and the vehicle’s amenities. When selling SAE, agricultural educators should be similarly prepared. Teachers that fully grasp the fundamental concepts of SAE can find a motivation to hook nearly any student. Some students will be drawn in from a genuine interest in learning, while others may have to be “shown the money” before they will buy in. The key for teachers is knowing their students well enough to gauge what will motivate each individual and knowing SAE well enough to find the motivators.

Mobilizing SAE Resources

Once students buy into SAE, the supervision must become more reflective and goal-oriented. Teachers must be able to facilitate growth, evaluate quality, and assist in the synthesis of records to provide students with the best SAE experience possible. This takes organization and a centralization of resources. Preservice teachers at the University of Illinois created a comprehensive SAE guidebook containing PowerPoint® handouts, interest surveys, proficiency area

descriptions, award applications, evaluation guides, and information pertaining to record keeping. While most agricultural educators have these materials at their disposal, they may not be centralized or in portable form. Using the SAE guidebook, teachers can quickly provide information to students about SAE possibilities, answers about record keeping, and advanced information to the students, both in the classroom or at a student’s home or jobsite.

Home and Jobsite Visits

Synthesizing resources helps teachers stay connected with SAE concepts and tools, but for SAE supervision to be a success, teachers must also be connected to the community. The best way to maintain this connection is the home or jobsite visit. The “individual instruction on home visits or on visits to businesses or farms where students are obtaining participatory experience requires considerable teacher time, but the results obtained justify the time required” (Phipps & Osborne, 1988). Home visits give the instructor the opportunity to analyze SAE projects first-hand and build rapport with students and families, which not only helps SAE supervision, but benefits classroom instruction and FFA involvement.

Conclusion

SAE projects should involve more than watching TV. So should the supervision of SAE programs. SAE supervision is perhaps the most difficult role for teachers to handle in their jobs. In order to be successful supervisors, agricultural educators must firmly grasp the fundamental concepts surrounding SAE and its value to students’ educational experiences. From there, an effective teacher can sell SAE to students, facilitate established SAE programs, and then connect to the communities in which the SAE

programs take place. When that happens, agricultural educators can truly engage in their “S” roles through SAE programs and help students reach their full potential through effective supervision.

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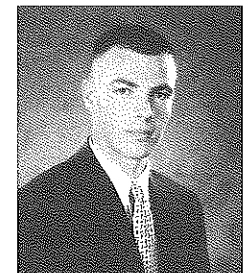
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Bane asserts that the home visit is one of many tools that an agricultural educator can use to help students build successful SAE programs. Ryan Brown, then a member of the Tomlin Middle School FFA Chapter, in Plant City, Florida, is pictured with his horticulture Supervised Agricultural Experience project. (Photo courtesy of T. Grady Roberts, University of Florida).

The Supply of Student SAE Programs and Demand of Agricultural Careers

By Amanda L. McClure
and Neil A. Knobloch

Agricultural educators continue to struggle with the challenge of making Supervised Agricultural Experiences (SAE) relevant to their students. A growing number of agricultural education students do not have SAE projects, and those students who do are likely to have entrepreneurship projects in production agriculture or work-based experienced programs with agricultural production-based businesses. Why are most of the students with SAE programs conducting them in the area of production agriculture when only 2 million of the 22 million jobs in agriculture are actually on the farm (Goecker, Gilmore, & Whatley, 1999)? Why are more than half of the students enrolled in agricultural courses in Illinois not actively participating in SAE programs (Facilitating Coordination in Agricultural Education, 2002), which is likely the case in other states as well? Most importantly, what can be done to address this problem?

A main focus of SAE programs has been on career development.

“SAE programs are teacher supervised, individualized, hands-on, student-developed activities that give students real-world experience directly applicable to careers in the broad fields of agriculture” (The National Council for Agricultural Education, 2002). To see if students were conducting SAE programs in areas of agricultural career opportunities, we compared projected agricultural career clusters in 2005 and state-level proficiency award applications in Illinois. We acknowledge the limitation that proficiency award applications may not be representative of all SAE programs in the nation. Yet, proficiency award applications do represent students’ interests in applying for proficiency awards and the types of SAE’s that get rewarded.

According to an agricultural career market study, Goecker et al. (1999) projected that 7% of the agricultural jobs would be in agricultural and forestry production. Further, the rest of the jobs would be in agricultural marketing, business, sciences, engineering, communication, education, and social services, with the largest areas

being science, marketing, and engineering. Moreover, these career clusters were projected to have the greatest growth of new jobs (Goecker et al., 1999). To compare the agricultural career clusters and SAE programs, the National FFA Organization’s 49 proficiency areas (National FFA Organization, 2003) were grouped into the five career clusters. Comparatively, nearly two-thirds (64%) of the state-level SAE proficiency award applications were in agricultural and forestry production, yet this career cluster will have the fewest job opportunities (Table 1). The greatest career opportunities are projected to be in agricultural marketing, sales, and business, but only 15% of the SAE proficiency applications were in this agricultural career cluster. The second largest career cluster of job opportunities—agricultural sciences and engineering—had 13% of the proficiency award applications in this cluster. Although there were gaps between projected agricultural jobs and SAE proficiency award applications for the career clusters of agricultural communication, education, and social sciences, the greatest opportunities for expanding SAE programs to

<i>Agricultural Career Clusters</i>	<i>Projected Agricultural Jobs in 2005</i>	<i>Illinois State Proficiency Agricultural Award Applications (2000-2001)</i>
<i>Agricultural & Forestry Production</i>	7%	64%
<i>Agricultural Marketing, Sales, & Business</i>	41%	15%
<i>Agricultural Sciences & Engineering</i>	32%	13%
<i>Agricultural Communication & Education</i>	11%	2%
<i>Agricultural Social Services</i>	9%	6%

Table 1: A comparison of projected agricultural jobs and state proficiency award applications.

prepare students for future agricultural careers were in the agricultural career clusters of agricultural marketing, sales, business, sciences and engineering.

If SAE programs give students real-world experiences directly applicable to careers in agriculture, then why are there not more students doing projects in the areas of agricultural marketing, sales, business, sciences, and engineering? Perhaps SAE programs are not relevant to students, especially if they are not connected to agricultural and forestry production. Therefore, the role of the agricultural educator is to make SAE’s relevant to students and create opportunities that would give students career experiences in agricultural marketing, sales, business, sciences, and engineering.

Create Opportunities

In many communities, it is challenging to find opportunities for high school students to explore the agricultural marketing, sales, business, sciences, and engineering career clusters because of the highly specialized skills needed to work in these careers. Agricultural educators may try to find opportunities to expand their own knowledge and experiences, and create opportunities for students to have SAE projects in the areas of agricultural engineering, marketing, and sciences. A few suggestions were offered to help stimulate ideas to create new opportunities for students.

Create strong partnerships within the community and school. Try to find local business professionals who would work with students to develop a marketing plan, and then give students 10% of the increase in sales for the quarter that students helped market the product. Collaborate with science and technology teachers to develop agricultural science projects and web sites.

Utilize technology to reach scientists and engineers that are located outside of the community. Use electronic mail to put your students in contact with agricultural scientists, specialists, and engineers. Students can consult with these professionals to conduct experiments and develop designs for new products.

Expand your knowledge and comfort zones. Some agricultural educators may not feel comfortable in the rapidly changing and highly specialized areas of agricultural marketing, sales, business, science, and engineering. Participate in summer professional development workshops, work with students in searching the Internet for educational resources, and plan class field trips to businesses, community colleges, and universities that may not be considered agriculture, but are rich with sciences and economics that relate to agriculture broadly defined.

Be open-minded. Agricultural educators should encourage students to choose SAE projects that would engage them in the areas of agricultural marketing, sales, business, science, and engineering. Non-traditional students need non-traditional opportunities to develop their career interests. Agricultural educators should be creative and help students see potential opportunities.

Conclusion

Agricultural educators should find ways to keep their programs current with the careers in the agricultural industry, and SAE programs are one way to keep programs current. SAE programs should be expanded to help students develop career interests and skills in the agricultural career clusters of agricultural marketing, sales, business, sciences, and engineering. In doing so, agricultural educators will help prepare students for the projected career demands of the agricul-

ture industry. Agricultural Education programs are likely to be more relevant if students are actively engaged in supervised agricultural experiences that more closely match the projected career demands of the agricultural industry.

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Providing Focus: Where Should We Lead Them?

By Tracy Kitchel

If you took five minutes to list all the roles of an agricultural education teacher, you could easily fill a page. However, one of the more prominent roles of an agricultural education instructor is to "guide students in selecting, planning, and developing appropriate SAEs" (National Council for Agricultural Education, 1992, p. 13). Given the concerns agriculture teachers have today about time constraints, family obligations, and cuts in extended contracts, the response to how to fulfill this role could take many forms. An unfortunate side-effect of these concerns has been an abandonment of the use of SAEs. In response to the above concerns and the aforementioned side-effect, I would like to introduce a different perspective in addressing these issues. Philosophically, we could look at SAEs from two different approaches. Somewhere in between these two approaches could be a solution to the problem of how exactly you should select, plan and develop your students' SAEs.

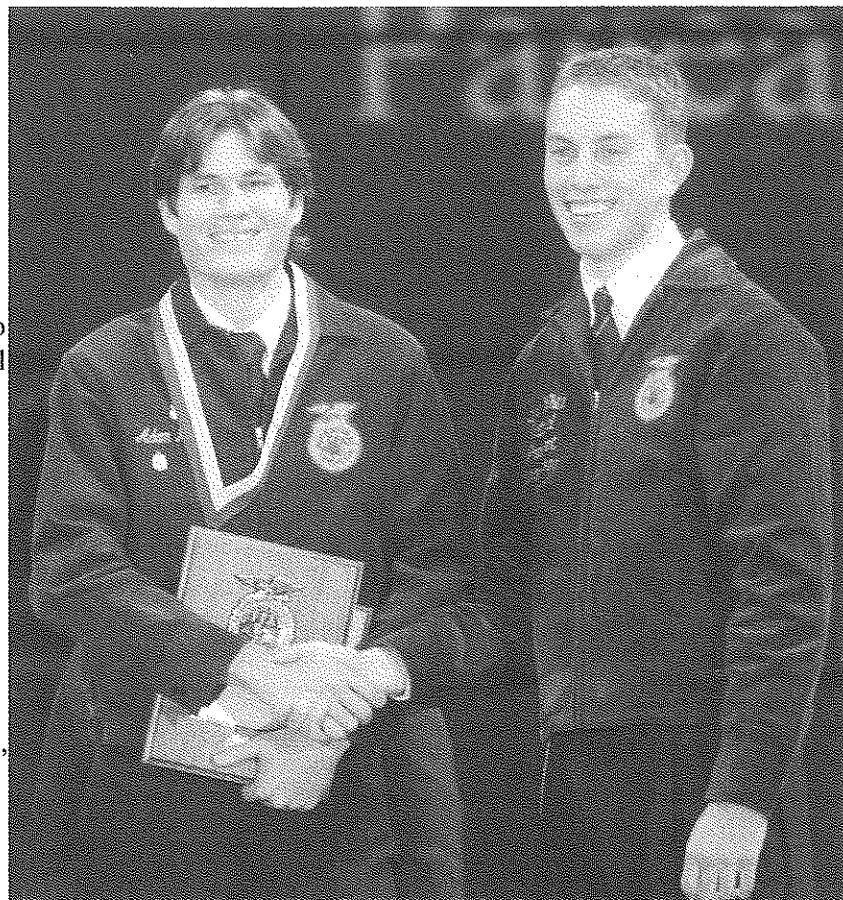
One approach involves complete individualization. According to the National Council for Agricultural Education (1992), students should "[c]arry out SAE programs in keeping with individual educational and career goals" (p.ii). This approach provides many benefits for the students in terms of learning. With recent brain research in education, which emphasizes meaning in the instruction, this approach provides better retention of knowledge (Jensen, 1998; Wolfe, 2001). The brain research emphasizes that meaning can occur through three routes: emotion, patterns and context, and relevance

(Jensen, 1998). In this scenario, relevance could be attained simply because the plan is individualized to the student's life. Emotion could come into play with the successes and/or failures of their different projects. Finally, context and patterns can be drawn from one project to another. For example, a student could take components of last year's projects in learning about improving this year's projects.

The downside is that all this individualization takes time; time that the teacher may be scraping to find. Along with all these individualized plans, comes individualized visits. With cuts in extended contracts and salaries, it becomes more difficult to delineate job responsibilities from volunteer work (not to say that agricultural education teachers don't do above and beyond work the way it is). Individualized plans also bring

about individualized assessments, individualized records, and individualized problems to be solved. Do the positives outweigh the potential downfalls, especially to an agricultural education instructor who is only on a nine-month contract?

The other end of the spectrum is molding a student's SAE program so that it would reflect less individualism, in a more streamlined approach. This streamlining could take several forms. One such way could be molding the program around the coursework. For example, if a horticulture class raised poinsettias for the holidays, then every student in the class would use that experience for their SAE that semester (or however long the course lasts). You may want to be cautious of this particular example, as it may be perceived as inappropriate (depending on what state you are in) to double up by counting time in class as an SAE.



In 2002, the National FFA honored Adam Newby as the Star in Agriscience. Adam works with the USDA Agricultural Research Service (ARS) as a biological science aid, studying pathogens that affect the horticulture industry. (Photo courtesy of Dale Layfield.)

The National Council for Agricultural Education (1992) states the SAE takes skills learned in the classroom and lab in an "away from the classroom" environment (p. 7). However, time outside of that horticulture class, perhaps study hall or lunchtime, may be acceptable to use. Another form, other than molding SAE around instruction, would be through FFA activities. This would probably be more supplementary to the SAE program than a main component, as the majority of project types molded around FFA would be home and community development in nature. An example could be any community service project a FFA chapter participates in throughout the year. The final streamline approach could be developing a program-wide SAE that encompasses a large number of students, such as building a farm learning lab for any and all of your students to raise market hogs for the fair or some other type of cooperative-type project combining the efforts of the students such as a fruit cooperative during fruit sales.

The upside to streamlining is that the resource constraints on the agricultural education instructor and program are minimal, unless you would be starting these instructional and FFA activities for the sole purpose of streamlining SAEs, for which you would have initial start-up costs. The definite positive is the decrease in number and types of SAE visits, and the resources spent on individualized development, which all equates to time. In addition, using SAEs as a way of expounding upon instruction could potentially provide more meaning for the students, and thus increasing retention of the knowledge (Jensen, 1998; Wolfe, 2001). However, it may not provide the degree of meaning to that of an individualized SAE program.

The downside to streamlining is simple. Individual student needs such as career development are taken out of

the picture and, therefore, SAE development is arbitrary based upon the greater good of the program and/or the majority of the students. You may use a greenhouse as a part of a course's SAE, however only one or two of the students may have interest in pursuing a career in horticulture. The FFA chapter may have 55% of its members in favor of a certain community development project, but because majority rules, the whole chapter participates and uses the activity as a home and community development SAE.

There are pros and cons between the extremes of individualization and streamlining. An agricultural educator must take into account all the variables in determining a solution which falls somewhere between the two. Take into consideration the following factors on SAE selection provided by the SAE Handbook (National Council for Agricultural Education, 1992, p. 14) when making the decision on how to guide SAE development:

1. Experiential and educational background of the student.
2. Personal interests and goals of the student.
3. Availability of financing the SAE.
4. Career interests of the student and competencies needed for the career.
5. Encouragement and support from the parents/guardians.
6. Availability of facilities to the student.

In an ideal world, the individualization of SAEs would be the best choice. However, the world is not ideal and so the following considerations need to be addressed as well:

1. Prioritization of the teacher's personal life to work life; and
2. Amount of extended time provided past the normal school day and/or year.

Whatever the scenario, take a careful look at making these decisions that reflect the best means of not compromising the quality of your program and not compromising the quality of your own personal life.

As an agricultural education teacher in Ohio, I battled with these decisions and was not always happy with the outcome. I leaned toward the side of individualization, however I knew that I wasn't able to commit the time of full development of all these individual SAE programs due to a limited extended contract. During my time at the school, we were in the process of refurbishing a barn on the school property to be used for SAEs, much like the example discussed previously with the market hogs for the fair. This would have allowed me to provide more quality guidance and feedback in less amount of time, and without disrupting the integrity of the SAE component of the school's agricultural education program.

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The Sixteen Theorems of SAE

By Gary Moore

Numerous graduate students in agricultural education have studied Prosser's 16 Theorems. Charles Prosser, an early leader in vocational education and a major architect of the Smith-Hughes Act, developed these theorems. Prosser's 16 Theorems are general statements on how vocational education programs should be operated. According to the on-line Merriam-Webster dictionary (<http://www.m-w.com/home.htm>) a theorem is "an idea accepted or proposed as a demonstrable truth". This writer suggests there are 16 theorems that govern the operation of Supervised Agricultural Experience (SAE) programs. If agricultural educators will follow these 16 theorems, the quality of the SAE component of agricultural education will be enhanced.

Theorem 1: All students should have a SAE. When the Smith-Hughes Act was passed in 1917, one of the provisions in the act required all students to have a SAE. Our founding fathers deemed it critical for the success of the agricultural program to have applied "hands-on-learning." SAE is recognized as one of the three major components of an agricultural education program. Students can learn much and benefit greatly from a SAE (Dyer and Williams, 1997).

Theorem 2: Instruction should be given about SAE. One of the reasons students may not readily embrace having a SAE is because they do not know why they should have a SAE. The teacher should spend 3-5 days early in the courses in which new agricultural education students are enrolled teaching about SAE and why it is important. More

detailed instruction should follow at a later date. Lesson plans and accompanying PowerPoint® slides to accomplish this purpose can be found at the SAE Central web site (<http://www.cals.ncsu.edu/agexed/sae/toolbox>).

Theorem 3: Letters should be sent to incoming students letting them know of the SAE expectation. A simple letter sent to new students prior to the start of class outlining the goals and objectives of the agricultural education program could work miracles. In this letter, the teacher should outline the program expectations and requirements along with the rationale for them. This includes SAE and FFA. In years of teaching, I found this to be a very effective way to "sell" FFA and SAE. When students and parents know in advance the expectations and why, it is much easier to get students to join the FFA and have a SAE. A sample letter emphasizing the SAE component can be found at <http://www.cals.ncsu.edu/agexed/ae522/letter.html>.

Theorem 4: Students should develop a preliminary plan and budget for their SAE program. Students may have grandiose ideas and plans regarding their SAE program but they may not be realistic. Time should be spent where students outline what they plan to do, identify the resources required, estimate the time involved, determine when critical tasks need to be performed, and look at the financial aspects of the proposed activity. This is essential for students to have a sensible, successful SAE program.

Theorem 5: A signed SAE agreement is essential. Everyone involved in a SAE program – parents, employer, students, teacher, mentor, etc. – should sign an agreement outlining specifically what the student

will be doing, who will supply the materials, and who will recognize any financial gain from the activity. This is to prevent misunderstanding on down the road. A sample agreement form along with other SAE related documents can be found at the FFA Local Program Success site (<http://www.ffa.org/lpsguide/sae.htm>).

Theorem 6: Records should be kept on the SAE. The research literature indicates one of the greatest benefits of having a SAE program is learning how to keep records. No matter what one does in life, record keeping is an important skill. Therefore, accurate and complete records should be kept on the SAE. I had students keep two sets of records – a pencil copy and a pen copy. The pen copy stayed in the classroom, while the pencil copy went home with the students.

Theorem 7: Time should be allowed in class for record keeping. If students are to take record keeping seriously, the teacher should take it seriously. To show the importance of record keeping, time should be allotted during the agricultural class for students to update their records. Some teachers have a set time every month to do this. Students should bring all their receipts, pay stubs and bills. Data from the pencil copy of the record books can also be transferred to the pen copy.

Theorem 8: SAE should be graded. If SAE is an integral part of the agricultural education program and is required, it should be graded. Many teachers have SAE count for 10-20 percent of the grade.

Theorem 9: On-site supervision is needed in SAE programs. What does the first word in the acronym SAE stand for? Supervised. Students need direction and guidance in

conducting the SAE program. This is the perfect opportunity for one-on-one individualized instruction.

Theorem 10: If a teacher has extended employment, much of this time should be spent on SAE supervision. The Smith-Hughes Act established the Federal Board for Vocational Education. This board established policy and guidelines for implementation of vocational education. One of the policies developed by the board was that agriculture teachers would have 12 months employment to allow the teacher to supervise SAE projects. Even though this board no longer exists, the principle that teachers should supervise SAE during the summer still exists. Supervision of SAE is the primary justification for having extended contracts. It is difficult to justify an agriculture teacher having an extended contract if there is no SAE program. Teachers must spend a good portion of their extended time supervising students' SAE programs.

Theorem 11: FFA proficiency award applications should be given to students at the start of their SAE. The FFA proficiency award program serves as a powerful motivator for students. In order for this motivational tool to work, students need to be aware of the proficiency award program when they first learn of SAEs. This can develop into a symbiotic relationship. When students see what type of information is called for in the award application, they will be driven to implement "approved practices" in the SAE program, which will result in a higher quality SAE and higher quality proficiency award applications.

Theorem 12: FFA proficiency awards should be given at the local level. The National FFA is willing to provide proficiency award medals and certificates free of charge to local FFA chapters. Therefore, the

agriculture teacher should be lavish in promoting quality SAE programs by giving these awards at the local level for quality SAE programs. This will further motivate the students.

Theorem 13: A training plan is crucial for internship (placement) types of SAE. A training plan identifies specific skills the student is to learn on the job. This is important in that it insures the students will learn a variety of skills and will not get stuck performing one single task all year long. The employer, student and teacher need to be involved in developing the training plan. This is in addition to the training agreement mentioned earlier.

Theorem 14: The SAE should be evaluated. At least once a year or once a semester in block settings, the teacher and student should sit down and evaluate the SAE. The teacher merely asks a series of questions about what the student has learned and what could have been done differently in the SAE program. The final step is to ask the student what he or she plans to do in the future regarding the SAE.

Theorem 15: Teachers should think outside the box in regards to what constitutes a SAE program. In the early days of SAE the federal officials determined what constituted a valid SAE. Most of us are familiar with the "traditional" types of SAE such as entrepreneurship and placement. However, we should be open to other types of experiential learning activities. Conducting agricultural research or carrying out an in-depth investigation of an agricultural issue and preparing a series of newspaper articles or a video about the issue may be just as educational, if not more, than raising a show lamb. See Moore and Flowers (1993) for a discussion of other types of SAE programs.

Theorem 16: Administrators must be educated about SAE. Most school administrators don't know the details of how an agricultural education program operates. Therefore, they need to be educated. This can be as simple as sitting down with your administrators from time to time and simply telling them about the components of agricultural education and why they are important. Highlighting student SAE programs at the annual banquet or in a chapter newsletter is another way to keep administrators and community leaders informed of SAE. You need the support of your administrator in order to have a strong SAE program. Open, direct communication about SAE is one way to achieve this.

The SAE component of agricultural education is one of the characteristics of agricultural education that makes it unique. It allows for applied hands-on learning. During the past decade, other areas of education have started embracing this concept even though they may use different terminology (i.e., experiential learning, problem based learning). Through the application of the 16 Theorems of SAE, we can keep the SAE component of our program strong.

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Technophobists Beware: Online SAE Up-Close

By Becky DeShazo, Liz Treptow, Mary Wilson, Sabrina Tuttle, John Dillingham and Larry Ermis

SAE is agricultural education's answer to true contextual and applied learning principles with emphasis on "real world" applications; it is a "lifeline" to knowing the students and parents on an eye-level basis; and it is the greatest personal counseling tool to reach today's high school generation. SAE, coupled with instruction and FFA, is a visible link for school-based and work-based programs enjoyed by students. But, the SAE acronym may invoke a phobia in teachers.

Time Testimony from a Teacher: "Somewhere among show exhibits, ag adventure days, illness in the family, reporting students' grades to administrators and parents, attending to my child at little league games, and going to CDEs, I try to find time to tend to my students' SAEs." Does this sound vaguely familiar to your daily schedule of balancing teaching and family? This new phobia could be chrono'agri'phobia.

Another phobia, fueled by Dr. William Camp's and Dr. Gary Moore's studies and topics on online assistance, is cyberphobia. A new "breed" of electronic SAE exists in today's agricultural classrooms. Electronic delivery means personal computer software and Internet resources. The seeds of electronic delivery were sown by the publication of the Local Program Resource Guide CD ROM by the National FFA, Team AgEd, The Council, and the National Association of Agricultural Educators. From those sound roots have grown eEfforts by State FFA Associations, corporate vendors, private individuals, and curriculum centers to deliver the electronic

assists for SAEs in an efficient and effective manner. Special innovative delivery methods of SAE and record keeping include special software programs, CD-ROMs, and online programs delivered through Excel templates, and at least one totally online record keeping system. Electronic tools while being great educational delivery methods may invoke another phobia in teachers: cyberphobia (fear of computers). Advice to cyberphobics: "Get over it. The new era of agricultural education technology has arrived on the scene just in the nick of time to reduce chronophobia."

Technology Testimony from a Teacher: "It has been my experience that students in today's classroom are much more visually attuned to information than ever before. While pen and paper record books provided a method of entering and recording information vital to entrepreneurship/placement enterprises, it lacked appeal to today's student. It was difficult to pressure students in completing the required information. It was also time-consuming and unmanageable to monitor and grade record books for all of my students. When record book computer programs were developed, I quickly converted to record book templates. Those electronic record books appealed to the students, they provided accurate mathematical computations, and reduced space requirements for paper books. However, the template had disadvantages. When record books were checked for awards and degrees at remote locations, computers required the record book software to be installed, and friendly printers were needed. Computer record books were not easily updated without utilizing class time, a valuable commodity. I spent a great deal of time

checking for the accuracy and completion of the books. The online system has changed all of that. My school was among the first to pilot-test the online record book. The previous year, we had piloted an updated pen or pencil record book that incorporated General Accepted Accounting Practices. My first year students used this book. The next year, those returning students who had become familiar with the new accounting methods were assigned an online record book. Now, all my students are assigned an Internet record book when they enter my agriscience department. I utilize the school computer lab for introduction to the basics of these books. Many students use Internet access at their homes to maintain their records."

Teachers' Comments Regarding Online SAE Technology

§ Online record keeping adapts to all SAE types. It fits "all" students for school-based and work-based SAEs (entrepreneurship, placement, agriscience, communications, exploratory, etc.).

§ Students save time and expenses. The student needs no paper, pen or pencil, or backpack.

§ The school saves valuable resources. No licensed software or hard drive disk space are required with online record books. Just boot up, access the Internet, and go! A teacher reports, "The school administration funded five computers for my department just for that very reason."

§ Online makes efficient use of available technology. The teacher and student use any Internet-based computer lab or station in school, at home, in town, or on the road! Online follows the user around.

§ Program updates are auto-

mated. Active HTML programming provides timely updates without interruption of services or additional costs.

§ Online records are secure; no more lost paper record books to worry about! It ensures user and data confidentiality via User ID and password protection, but permits access by teachers to their students' record books. A record book archive option allows for later retrieval of record books at no expense.

§ Online links the "S" to the "AE." It ties the supervised part of outside agricultural activities to the curriculum and extends the contextual learning arena.

§ Teachers save time in reviewing SAEs. Student records are at "a click of the mouse." A teacher keeps tabs on the activities of 150 to 200 students. In supervising students at home via Internet records, the teacher asks and answers specific questions, views the students' inputs in real time, and discusses with parents with a virtual "home visit."

§ Online saves purchase and delivery time to the school. A teacher enroute to a record book workshop to train other teachers in financial management uses a cellular phone to request online books. Prior to the start of the workshop, the record books are "delivered" and accessible to the trainer and workshop participants, thus creating a positive learning attitude and more time for interaction among the teachers.

§ A teacher, in lieu of preparing a written semester examination, provides the students with a take-home virtual exam – the online record book. With approval of the school board to allow their students' record books to count for a state suggested semester exam, the

teacher allows the students to complete and submit their online book for evaluation and grading in place of a traditional semester exam. The students like the "take home" exam and the teacher's paper shuffle is an electronic shuffle that can be graded from anywhere and any time with a PC and Internet connection.

§ Online communicates results to others. The student's personal, curriculum, and financial portfolio are available for parent conferences both at school and at home. Prospective employers of students can review the online data. And for students who excel with their online record books, their FFA degree and proficiency award "online applications" are ready for objective evaluation and recognition. This is a win for the student, a win for the parents, a win for the prospective employer, a win for the teacher, and a win for the school.

§ Teachers reduce their "time on the road." A teacher "home schools" with parents using home school options from distant locations. This is ideally suited for Alaskan-type geographic expanses where a remote teacher can monitor students' progress via the Internet.

§ Online increases knowledge base of teachers, students, and parents. A teacher supervises record keeping efforts on a 24-7 basis and involves the parents in the equation. The teacher saves travel time and delves into directed distance education. Although online requires quality teacher time and input, the real payoff is increased interest in ag business, acquisition of and use of "learner centered" Internet tools, increased student involvement in awards and degree programs, etc.

§ Users communicate electronically with the system supplier. An electronic mail link allows for a quick and efficient means of commu-

nications when the teacher or student needs an answer to a record book inquiry in real time. Responses are provided within one working day.

§ Online means staying ahead. It allows teachers, students, and parents to experience the latest in computer-based telecommunications technologies.

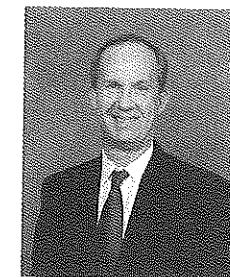
Some phobias that have formed in the last two centuries are electrophobia (fear of electricity), motorphobia (fear of automobiles), and aviophobia (fear of flying). Most teachers managed to "get over" them. So technophobia, move over, the best is yet to come.

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Balancing SAE and the 101 Other Duties of a Teacher

By John H. Schut

Among the many challenges that new teachers face is balancing the many duties involved in delivering a well-rounded, agriscience and natural resources program to students. Teachers assume many roles including teaching, FFA advisor, curriculum planner, industry practitioner, program marketer, career counselor, application guru, public speaking coach, livestock/plant/natural resources consultant and supervisor of the many diverse student SAE programs in the program. In many programs, SAEs are integral parts of the program, while in others, their role is less.

When managing the "animal" of SAE supervision, be prudent and resourceful of your time. Some schools offer release time for SAE supervision while others do not. In schools that have release time, the teacher must not misuse the time. Focus areas should be gauged towards all students, not just a select few. Setting up a regularly-scheduled visitation program for each class is necessary. In this setting, working with the 11th and 12th grade students early on helps facilitate planning for state proficiency application photos.

When taking these photos, they should focus on skills and activities that are relevant to the application. Beginning the photo documentation process early in a student's career is helpful to avoid gathering photos two weeks before the application is due. Utilizing the FFA's proficiency award program serves a number of purposes. The program offers a planned experience and award program for students. It highlights the many careers in agriscience and natural

resources. It also provides public recognition for students and justifies release time for the teacher.

Before the visit, the teacher should notify students one week in advance to allow for planning and necessary paperwork to be completed. School forms such as pre-excused absence forms are useful as they document parental approval. Students should have an opportunity to complete a pre-observation visit form that outlines their program, goals and completed activities for the year.

During the visits, teachers should have clear communication with the student, parent and employer. Two or more students should be supervised during a visit to share ideas between students and the teacher. Keep an accurate record of mileage which should be reimbursed by the school district. If a district vehicle is available, make proper arrangements to use it prior to completing the visit. While conducting the visit, the teacher should visit with the parents and employer if available. Be respectful of regulations if visiting a business place or biosecurity precautions if visiting a farm. Make sure the student is involved in the visit so that both the student and teacher are learning about the program and ways to improve it. It is also an excellent time to discuss goals, education and career plans, and personal ambitions of the student.

After the visit, the teacher should follow-up with the student. Some techniques that work are presentations in class by students on their SAE. A portfolio of their records, goals and achievements can be tied into the course. Some schools incorporate the SAE as a part of the course grade. There are many ways

to involve SAE in the curriculum. Other schools have partnered with School to Work and Career Pathways resource people to highlight student achievement in career exploration.

What does the teacher do in cases where release time or summer programs are limited or non-existent? One idea that has worked is partnering with alumni to assist in supervision of the SAE. Alumni can serve as field mentors with expertise for students. Many have specialized experience that students can use in planning and conducting their SAE. Another approach is to work with the school's work-based learning supervisor in supervising students who are participating in their program. Depending on the size of the local program, teachers may opt to conduct all of their visits after school. The main piece to remember is to keep a balance and not burn out too quickly. The visits will build relationships with the community and students. As the teacher learns more about the community, resource persons come out of the woodwork to help facilitate and operate SAEs.

The management of a SAE program must be a balanced part in the local program. Planning and utilizing school resources are necessary to help manage the task. SAEs must be an integral part of career exploration and classroom instruction which make a student's learning experience complete and well-rounded. The FFA offers recognition for experiential learning and helps accentuate the many positive learning experiences that occur outside of the classrooms walls.

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A Non-Rural Teacher's Journey in SAE

By Dan Swafford

As we enter the 21st century, agriculture education teachers are faced with both an opportunity and a challenge to prepare our students for the high tech agriculture that awaits on the horizon. For 75 years, agricultural education teachers and students have rallied around the FFA as their basis for the SAE program. This view leads many teachers to view entrepreneurship as the only "real" SAE. Others have the view that SAE is no longer an important part of the total agricultural education program.

As an agriculture education teacher in Virginia for the past 25 years I have witnessed many changes in SAE and in the role of the agriculture education teacher in the SAE program. For the past 14 years, I have taught at Christiansburg High School in Virginia. Although it is located in a rural area, the school population is not rural. With a population of 20,000, this community is located six miles from Virginia Tech. Besides Virginia Tech, southwest Virginia's largest employer, there are several factories, a major army ammunition plant, and Radford University located nearby.

With most of the local population working in non-agricultural jobs, SAE programs are a challenge, but I have discovered that challenges are also opportunities. I firmly believe that SAE should prepare students for the future of agriculture. In the Christiansburg area, that future lies in agricultural research. This stems from the Virginia Tech's College of Agriculture and the College of Veterinary Medicine located "just down the road". This was the

opportunity that I had been looking for in developing a new focus for SAE.

When I first came to Christiansburg in 1989 the program consisted of approximately 50 students enrolled in an agriculture mechanics curriculum. The program had stagnated. For the first three years I studied the problem. During the summer of 1992, I decided that in order for the program to grow, major changes must be made. First, an updated curriculum must be introduced and more emphasis placed on preparing students for work at our largest local employer, Virginia Tech.

Since the College of Veterinary Medicine at Virginia Tech was a center of small animal research, I made the decision to change the major thrust of our curriculum from Agricultural Mechanics to Small Animal Care. This caused our enrollment to increase from 50 to 105 students in one year. At the present time, our student enrollment stands at 300 students. There are approximately 100 students in agricultural mechanics, 150 in small animal care and 50 in horticulture. There are now three instructors in the department.

At this same time in 1992, I made another decision to change the direction of SAE. Up until that time, SAE was looked on as something that the "farm kids" did. Faced with preparing students for work at the College of Agriculture and not on a farm, I felt the student's SAE must prepare them for the future of agriculture at a major university.

The challenge I faced was where my students were going to get SAE experiences in agriculture research. The university was not a possibility for employing students until they were 18 years old. Faced with this fact, my department developed a

small animal care laboratory, aquaculture laboratory, and an outdoor research area. These laboratories have given students "hands on" experiences in these areas of agriculture research. Older students in the program have had the opportunity to work as interns at the university level between their junior and senior years.

The FFA has provided another avenue for SAE in agricultural research. Since 1993, our chapter has participated in the AgriScience Student Recognition Program at the area and state level. Since that time members from the chapter have placed first in the state competition five times. Finally, our department applied for and received a grant under the USDA Challenge Grant program, to develop robotic farm machinery. This grant has allowed our agricultural mechanics students to see and participate in the future of agriculture.

Have these changes been successful? Each year during the past four years we have had at least five former graduates studying agriculture in college. Since 1994 our chapter has had least five area proficiency award winners and at least one state proficiency award winner each year. Finally, what has been my role as an agriculture teacher in SAE over this time? I believe that my role has been to make change. I firmly believe that if I had not made changes in the curriculum and SAE, my program would not have grown. More importantly my students would not have had the chance to prepare for the future of agriculture.

Dan Swafford is an Agricultural Education Instructor at Christiansburg High School in Virginia.

Opportunities in Research: SAEs and FFA Agriscience Activities

By K. Dale Layfield
and Salvatore A. Sparace

For a number of years, many educators, including the authors of this article, have been promoting the need for exposure of scientific concepts in agricultural education curricula. In recent years, it seems that many had put this concept to rest until the emphasis on *No Child Left Behind* legislation. This emphasis has seemingly created resurgence in the interest in fostering science understanding through integrated activities. However, this time around, agricultural educators have a plethora of opportunities and materials available that support the "agriscience" concept. Additionally, "agriscience friendly" changes have been adopted in two integral components of agricultural education, SAE and the FFA.

While visiting both of these areas, keep in mind the theme of this issue, "What is the role of the teacher in agricultural education?" Moreover, what is your role in strengthening the scientific understanding of related concepts in your curriculum?

Since the time of changes from the earlier Supervised Occupational Experience (SOE), several models emphasizing a more science-based structure for SAEs have been developed. Moore and Flowers' (1993) "Expanded SAE Model" recommended a new "Experimental" category intended for students involved in planning and conducting agricultural experiments using the scientific method.

Camp, Clarke, and Fallon (2000) built upon this idea by recommending

a more encompassing category, titled "Research." Based on leadership from the National Council for Agricultural Education, the eventual title "Research/Experimentation and Analysis SAE" evolved, and is now formally recognized in the current Local Program Success resource guide.

FFA and Agriscience

Along these same lines, National FFA leaders recently acknowledged the "Research/Experimentation and Analysis SAE" by the addition of the "American Star in Agriscience." This award recognizes those students who excel in agriscience-based (natural resources, research/experimentation, and/or directed science-based laboratory research) SAEs at the chapter, state, and national levels (K. Keith, personal communication, November 26, 2002). The national winner of the American Star in Agriscience receives all honors of the "Star" program and a \$2,000 award, just as his/her counterparts in the American Star Farmer, Agricultural Placement, and Agribusiness categories.

Another new program developed by the National FFA includes the Agriscience Fair, with competitions possible at the chapter, state, and national levels. Middle and high school students display their experiment-based SAE work in a competitive display that is similar to those of traditional science and engineering fairs, except that the theme is in an agricultural context.

The Agriscience Fair has five categories of submission: 1) Biochemistry/Microbiology/Food Science; 2) Environmental Sci-

ences; 3) Zoology; 4) Botany, and 5) Engineering. More details on the categories and the Agriscience Fair competition are available through the National FFA Web site (http://www.ffa.org/programs/ag_sci/html/agscifair_categories.html). Spencer (2002), an agricultural educator in Iowa, presents valuable tips and insights for encouraging student involvement in agriscience programs and the agriscience fair in a recent issue of this publication.

A final program sponsored by the National FFA that can also be used to stimulate student interest in agriscience is the "Agriscience Student of the Year". This program recognizes a student in each state and one national winner that apply scientific concepts and emerging technologies in the agricultural industry. Likewise, a parallel program "Agriscience Teacher of the Year" recognizes teachers with programs that emphasize science concepts.

Unfortunately, many of these FFA "agriscience" programs are being underused. Based on correspondence with National FFA Staff, participation in the "agriscience" categories at the 2002 National FFA Convention was promising, but many opportunities for recognition of students in this area still exist.

A review of the numbers of participants in the various "agriscience" categories by states or territories at the national level indicate that in 2002 only 8 out of the 52 possible Star Agriscience candidates (R. Hunsinger, personal correspondence, November 27, 2002), 30 out of 52 possible Agriscience Student of the Year nominees, and 17 out of 52 possible

Agriscience Teacher of the Year nominees were submitted.

A total of 207 participants (C. McDaniel, personal correspondence, November 27, 2002), were involved in the 2002 National Agriscience Fair. However, representatives from all agriscience category winners from each state could total more than 1,000 entries at the national competition. Clearly, there is still considerable opportunity to recognize the scientific efforts of agriculture teachers and students in all of these FFA programs.

The Teacher's Role

Realizing many of the future needs of agricultural education, including numerous incentives and opportunities already available, a safe question for any reader at this point might be, "What is my role in developing student competency in agriscience/experimental SAEs?" Many teachers may feel unprepared to assist their students in developing experimental SAEs or participating in agriscience activities. One of the greatest resources for agriculture teachers can be the local science or biology teachers, often just down the hall in their own schools. As pressure to improve scores on standardized tests continues, science teachers and agriculture teachers alike must both realize the assets they have in each other's expertise.

Both groups of teachers have a shared professional objective, securing students' understanding of the fundamental scientific concepts that are already so much a part of their lives and will play an even greater role in their future. This can be effectively achieved with the real-life science-driven applications offered by agriculture and developed through either the traditional high school science fair or the agriscience fair. In this regard, many agricultural

educators that have assisted students with successful SAE programs involving agriscience have relied on cooperative efforts of science teachers.

The involvement of science teachers obviously plays a critical role in assisting students with interest in developing research-based SAE programs. However, some of the following ideas may be of value in attaining this goal:

- * Evaluate the advisory committee of your program; does it reflect where you are going, or where you have been? Are valuable community resources overlooked?
- * Encourage professional development opportunities in this area. Does your regional and state professional development reflect your needs? Your voice/vote counts!
- * Encourage/nominate successful teachers in your state for the Agriscience Teacher of the Year program. Who nominates those worthy of this honor in your state?

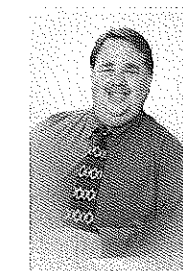
Concluding Thoughts

Much like the content of science in agriculture, the tools for highlighting science in agricultural education have also changed. Efforts of such entities as the National FFA and Team AgEd have provided useful ways to not only enhance the level and quality of science in agricultural education, but also to recognize the achievement of excellence by both teachers and students. There is still much room for growth and participation in these

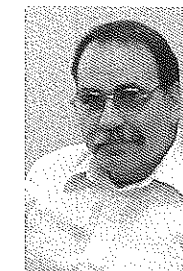
activities as teachers continue to acknowledge the role of science in agriculture. Agricultural educators are encouraged to make better use of these tools to foster greater science in agriculture and to recognize excellence in agricultural education.

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It Wouldn't Be Fair!

By G. Victor Beekley

G. Victor Beekley (a pseudonym) taught agriculture at 1000-student Country High School, grades 9 to 12. His experiences, recounted in a series of vignettes, describe the challenges and opportunities teachers face as they teach and learn from students.

The school year was off to a good start. The 15 students in the 9th grade agriculture course were eager and enthusiastic and well on their way to getting acquainted since they had completed the first eight years of their schooling in six different elementary schools located throughout the county. Agriculture teacher G. Victor Beekley was acquainted with the students. With one exception, he had visited their homes and farms during the summer before school opened.

Beekley had not visited Sam Barnes, a shy, reserved, quiet boy who lived at least 20 miles from the school in the southeastern part of the county. That area of the county was the most rugged and least agriculturally productive and was known primarily for the production of ground limestone that was abundant in the mountains there.

Sam was absent on Monday of the second week of school. Beekley's inquiries of other students in the class resulted in no information, since Sam was the

only student in the class who had attended Maplewood Elementary School and his shy nature did not contribute to other students getting to know him during the first week of school.

After a couple more days of Sam's absence, Beekley checked the school's records to see what he could learn about Sam and his family. About all he found was Sam's home address and information about the elementary school he had attended. Responses to Beekley's inquiries in the other agriculture classes revealed no one who knew Sam but did result in some general directions to the area where Sam lived. The travel instructions were given with wishes of "good luck," since the rugged terrain in that part of the county necessitated a rather circuitous route among the hills and valleys to reach Sam's home.

So after school near the end of the week Beekley set out to locate Sam's home. After asking for directions a couple of times Beekley was directed to a small unpainted, ill-kept house where he saw a middle-aged man doing odd jobs. Approaching the man, Beekley announced, "I'm Victor Beekley, teacher of agriculture at County High School. Sam Barnes is one of my students. Is this where Sam lives?" The man, in a friendly manner, replied, "Sam's my boy; this is where we live." After some casual comments it was clear that his dad was not going to volunteer any information about Sam or invite Beekley to visit with Sam.

Beekley explained to Mr. Barnes why he was visiting. He reviewed that Sam had attended the first week of school but had not attended since. He inquired whether Sam was ill perhaps, and when assured that Sam was fine, he explained to Mr. Barnes that he was there to encourage Sam to attend school regularly. "He won't be coming back," Mr. Barnes replied in a matter-of-fact way.

Beekley, attempting to mask his disappointment, tried several comments and questions in an attempt to learn why Sam would not be returning to school. "It wouldn't be fair," was Mr. Barnes response. "Mr. Barnes, I don't understand why it would not be fair for Sam to attend high school," Beekley pleaded. Mr. Barnes explained that Sam was the youngest of six children and that none of his sisters or brothers had gone to high school. His logic was that since none of his other children had attended high school it would not be fair to Sam's brothers and sisters for Sam to go to high school.

After brief, probably meaningless comments, a dejected and disappointed Beekley began to drive back to County High School. Mr. Barnes' comment, "It wouldn't be fair," haunted him. He played over and over Mr. Barnes' rationale that it wouldn't be fair to Sam's sisters and brothers if Sam were allowed to attend high school. The more he thought about it the irony of the situation became clear – it also wasn't fair to Sam to deny him the opportunity to attend high school!