

**The “CASE” for Rigorous and Relevant Curriculum
in Agricultural Education**

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Introduction

The concern regarding low academic achievement among secondary students is widely documented and debated among political leaders in our country. Student academic performance, or lack of, is influencing the role of agricultural education in our public school system (Case, 2006). For agricultural education to survive in a climate of unprecedented accountability, a new direction is solely needed to assure higher levels of achievement by secondary agricultural education students.

In October of 2005, the National Council for Agricultural Education (NCAE) initiated a new vision for the future of agricultural education in the United States (Osborne, 2007, June). The “10x15 Long Range Goal for Agricultural Education” on the surface appears to be an aggressive, goal to increase the number of agricultural education programs in the country to 10,000 by the year 2015. However, 10x15 stresses our long term goal is to develop 10,000 quality programs. To facilitate the development of quality programs, the NCAE identified eight initiatives defining the National Program Standards for Agricultural Education (National FFA Organization, 2008). The third initiative calls for the creation of a curriculum model to establish a sequence of agricultural education courses to enhance the delivery of agricultural education.

The Curriculum for Agricultural Science Education (CASE) project was established to provide a structured sequence of courses, but CASE also serves as a model for elevating the level of rigor and relevance expected for the new vision of agricultural education. Rigor of CASE is validated by the alignment of lessons with national standards for agriculture, science, math, and English.

For connection of relevance with student learners, the CASE curriculum highlights the strengths of experiential learning, the heart and soul of agricultural education, by utilizing activity-, project-, and problem-based instructional strategies. To provide the technical guidance in curriculum development using this approach, the NCAE sought out a partnership with Project Lead the Way® (PLTW). A nationally recognized curriculum development organization, PLTW has successfully designed and implemented courses based on the rigor and relevance philosophy.

Project Attributes and Development Phases

CASE courses provide the teacher a comprehensive package of all teaching resources required to instruct lessons. Each lesson plan contains teacher notes, PowerPoints, activity instructions, and assessments. Lessons are designed to provide everything the teacher needs at a click of the mouse. The philosophy behind a CASE lesson is to empower the student by providing students an active role in their learning rather than learning being a product of teacher led instruction.

Another major innovation CASE has adopted is the intensive professional development component. In order for teachers to access CASE lessons, they must complete a mandatory professional development session to fully understand how to effectively use CASE lessons. This model for professional development has been adopted from PLTW, and has been proven to ensure the quality of instruction for which the curriculum was design to promote.

The first two courses in development are foundation courses for Animal Systems and Plant Systems. In order to establish content objectives for the composition of the courses, a team was assembled to brainstorm important concepts related to animal and plant science. Each team, called a “kernel” team, was composed of 30 individuals representing 12 states across the country. These people included a majority of practicing agricultural educators from the secondary level, but also included members from agricultural business, industry and post-secondary education.

The kernel team members provided the important concepts and themes required for the course development. In addition, team members wrote lesson ideas and provided curriculum directors some of the teacher’s best teaching strategies for the related concepts. From those initial “kernels” representing lesson ideas the complete year-long course is designed.

Once the course is written, pilot testing is completed to ensure lesson components are valid in their design and content. Pilot testing is followed by professional development for kernel teachers who will conduct field testing. Field testing is the ultimate face and content validity check for a CASE course. This step will provide necessary information for changes required for ensuring the goals of the project are being fulfilled prior to full course implementation.

Once the curriculum packages are available, further assessments are designed to evaluate the effectiveness of the lessons. The evaluation step is an on-going process to provide the necessary feedback to keep CASE curriculum current. All CASE courses will be continuously revised to ensure the level of rigor and relevance is in pace with changes in technology and science.

Future of the Project

The CASE project will have a total of seven courses developed as part of the sequence for agricultural education. Besides foundation courses in animal and plant systems, CASE will be developing these following courses over the next six years:

- Animal and Plant Biotechnology
- Bio Systems Engineering and Technology
- Food Science and Safety
- Natural Resources Environmental Sciences
- Agricultural Sciences Research and Development (Capstone course)

References

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