

## Arizona's Challenge: A Process worth Duplicating

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### Introduction

Educators struggle with meeting the variety of demands from legislation, administration, parents, and industry. Education addresses these demands by developing standards that outline high academic knowledge and performance skills (Lynch, 2000).

Arizona Agricultural Education faces the same challenges. A group of educators and industry leaders developed new Agriscience Standards for Agricultural Education that implemented the State Science Standards and the seven Agricultural Career Clusters (Arizona, 2005). The greatest challenges were implementing the new standards within two years and drastically changing the content and methodology that was currently being used. Interestingly, the Arizona Agricultural Teachers Association (AATA) chose to take a proactive approach. The AATA Curriculum Committee took on the challenging task of developing a curriculum that could be used by all Arizona Agricultural Education Programs to teach the new Agriscience Standards.

### Methodology

The development of the AATA Agriscience Curriculum was divided into four stages: planning, collection and organization, development, and distribution. The curriculum committee had several planning meetings under the direction of two Arizona agricultural teachers appointed to project directors. In addition, the committee identified that the LifeKnowledge and Colorado Agriscience Curriculum have great lesson plan formats and developed a similar one to meet the needs of Arizona Agricultural Education.

The second stage was collection and organization. The committee hired two graduate students from the University of Arizona to complete the task. They sent out daily emails requesting lessons, power points, activities, assessments, and any other additional educational tools that could be used to teach the identified measurement criteria of the day. To prepare for the next stage, the collected materials were used to develop lessons in the determined format. In addition, past Agricultural Standards were used to develop assessments for the new Agriscience Standards.

The third stage was the development of the curriculum and was divided into two phases: writing and review. The committee hired six Arizona agricultural education teachers to work collectively for one week at the University of Arizona and write the curriculum for the Arizona *Applied Biological Systems* and *Agriscience I* Standards. On the first day, project directors provided the writing team with training on developing an effective curriculum and then sent

them to work. An additional ten teachers came on board the last two days as volunteers to develop supplementary materials (such as power points, worksheets, handouts, and assessments) for the writing team's lessons. The next phase was the review of the developed curriculum. Another group of six Arizona agricultural education teachers were hired to edit the developed curriculum. They looked for spelling, grammar, and content errors, proper format, constancy between the lessons and supplementary materials, and learning activities for all learning styles.

The final stage was distribution which was also divided into two phases: pilot test and final. The curriculum was organized onto a CD-ROM. A pilot test copy was sent to the members of the writing and review team to identify any possible problems with the product. Then the curriculum committee distributed the final edition of the Arizona Agriscience Curriculum to the Arizona agricultural education teachers at the 2006 AATA Summer Conference.

### Results

During distribution, the project directors asked all the curriculum committee members, teachers that sent in materials, writers, volunteers, and reviewers to stand and be recognized. Over half of the teachers in attendance stood to symbolize their assistance in the development of Arizona Agriscience Curriculum CD-ROM which includes over one hundred lessons complete with power points, worksheets, handouts, assessments, answer keys, enrichment activities, and additional resources. A solid curriculum developed for Arizona Agricultural Education Teachers, by Arizona Agricultural Education Teachers.

The project cost approximately \$25,000. While some revenue was generated through the sale of the CD-ROM for \$250, total project losses were considered an investment in the profession. The project was also financially supported by the association affiliates. The Arizona Department of Education provided hotel rooms for the project directors, writers, volunteers, and reviewers. The University of Arizona's Department of Agricultural Education donated office space for the project and other various supplies.

### Future Plans

Although the project was a success, the committee is planning an evaluation of the curriculum. Teachers are encouraged to submit any recommendations and additional materials that will add to the effectiveness of the curriculum. Current research is being conducted to determine the reliability of the assessments included in the curriculum.

The curriculum committee is at work again. This summer they plan to follow the same methodology to develop another curriculum for the Arizona Agriscience Mechanics and Agriscience II Standards.

## References

- Arizona Department of Education. (2005). *Arizona Career and Technical Education Framework*. Phoenix: Arizona Department of Education.
- Lynch, R. L. (2000). High school career and technical education for the first decade of the 21<sup>st</sup> century. *Journal of Vocational Education Research* 25(2).