

**Improving Agribusiness Education, Research and Industry Interaction
Through Educational Coalitions**

Mark A. Wade

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Mark A. Wade, Assistant Professor, Food and Resource Economics, University of Florida

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Improving Agribusiness Education, Research and Industry Interaction Through Educational Coalitions

Abstract

Students gain knowledge and skill through interaction and hands-on experimentation. The formation and development of successful educational coalitions or partnerships are examined, including diversity of membership, plan development, funding and infrastructure. Potential pitfalls and strategies for success are presented. Students learn best from those that are doing and by doing.

Introduction

Methodologies utilized in both “classical” education and vocational or technical education programs (referred to as Cooperative Education in the 1960’s) recognize the importance of experiential learning as part of the overall transfer of skills and knowledge from teacher to student (McKeachie). It has long been acknowledged that most students benefit when classroom lectures are accompanied by hands-on experience (Davis; McKeachie; Cushner, McClelland and Safford). At the same time, industry concerns about the appropriateness of university training and its application to industry standards has grown. Agriculture in the 21st century is far more complex and inter-disciplinary in nature, making the job of developing future agribusiness leaders more difficult (Krebs). Compounding the problem is a research network, which often fails to incorporate industry needs with research objectives or to involve students in what could be tremendous learning opportunities. It is important that synergy occur within the education – research – agribusiness triangle so that all partners can benefit from the successes experienced by individual members. This then creates an agricultural environment where the whole is greater than the sum of its parts.

Objectives

The objective of this study was to examine the formation and development of educational coalitions as a means of providing a link between agribusiness student education, research and industry partners (Coalition for Science Literacy). This study is important, in part, because of the financial constraints faced by students, researchers and agribusinesses today. Resources can be utilized more efficiently when members share technical information and develop collaborative efforts. The transfer of knowledge occurs at a faster rate when funds are shared, mentoring

programs exist, professional standards are established, and School-to-Work programs provide a flow of qualified graduates into the agribusiness sector.

Coalitions

It can be a vast understatement that coalitions and other activities that utilize group consensus are time-intensive. It is often easier to do something yourself than to involve others. The question of coalition formation and success then becomes one of costs and benefits. Are the benefits of participation greater than the costs involved? It is important to note that costs and benefits can take on many forms, some more tangible than others. For example, networking, an important by-product of coalition membership, can be essential to fund generation, publication, and even tenure and promotion. Yet, it can be difficult to evaluate the cost of network development. Coalition membership frequently offers future benefits that may involve immediate costs.

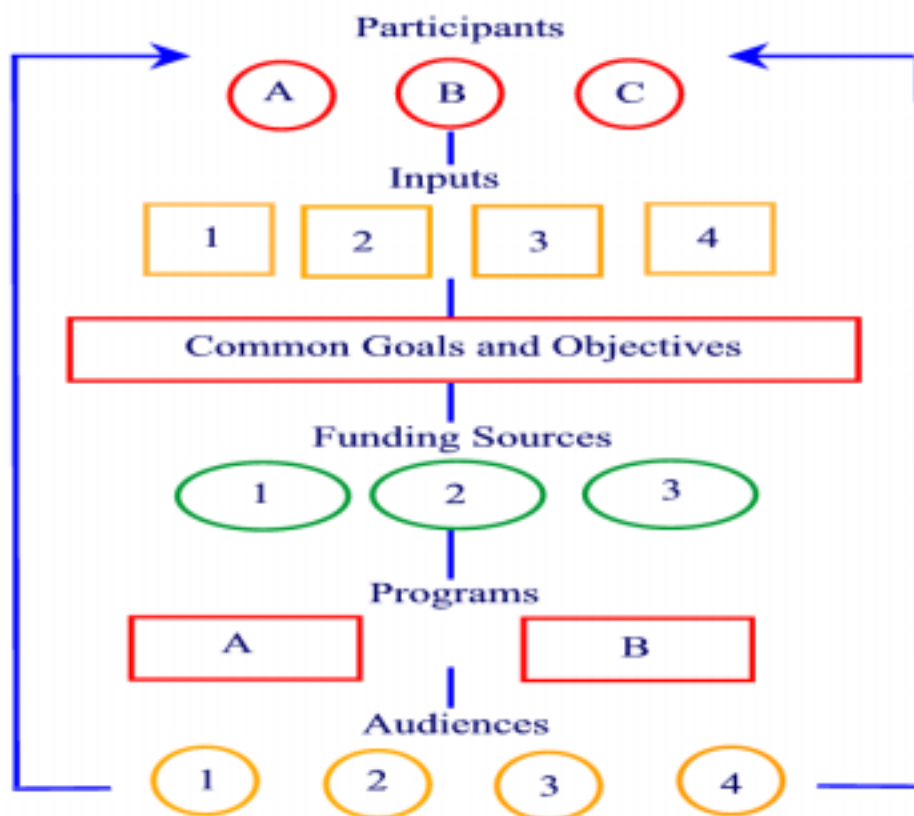
Upon examination, successful coalitions generally include six elements: diverse membership, a plan of development (infrastructure), common goals and objectives, funding, defined programs, and measurable results. Figure 1 provides a simple diagram of this coalition structure.

Diversity of membership is important because each member brings a unique set of inputs or resources to the coalition and expects a specific benefit from participation. While participants may be diverse, each must have a vested interest in the success of the coalition.

The initial key to successful coalition formation is having a well-defined objective or mission statement. A clear definition of what the coalition stands for and hopes to achieve is needed to keep members involved or to solicit potential members. Members will quickly splinter

and become disillusioned if results fail to manifest. Each member should be able to state their degree or level of participation and their expected gain from coalition involvement. The term “member” can refer to an individual, but is generally meant to define an organization, institution or firm that has committed to coalition participation.

Figure 1. Coalition Structure and Flow



Once goals and objectives are established, funding and program implementation issues can be addressed. Given the diverse membership of the coalition, a multi-discipline and multi-agency or organization approach to funding can be taken. Legislative and grant funding, which rewards this type of partnering, can be more easily obtained because programs are multi-dimensional and are focused on a specific target audience.

Coalition Profiles and Results

A general discussion of the coalition or partnership philosophy was initiated previously. While the structure described in Figure 1 may be abstract, the framework has been utilized in the creation of many successful coalitions which the University of Florida Indian River Research and Education Center has participated. Three specific coalitions were profiled in terms of the six identified elements. Each of the coalitions was selected at random from a wider assortment of partnership programs. Some effort was made to select a variety of coalitions with respect to the complexity of structure.

Research and Education Coalition

The Research and Education Coalition was initiated by members of the St. Lucie county (Florida) community as a means of coordinating educational activities, programs and funding along the Treasure Coast. Membership includes the University of Florida, Indian River Community College, Barry University, Florida Atlantic University, four individual school districts, Harbor Branch Oceanographic Institute, the Smithsonian Field Station, area businesses and politicians. Each participant contributes to the coalition in a different way. The university partners provide a higher level of knowledge and specialization in a variety of subject areas including agribusiness, agroecology, horticultural science, virology, entomology and aquaculture. These faculty members serve as academic mentors, science fair sponsors, judges at scientific competitions, guest lecturers, provide job-shadowing opportunities to future scientists, provide laboratory space and equipment, and the opportunity for students to practice the concepts they have learned in the classroom. The community college provides dual enrollment courses that apply towards Associate of Arts and/or Associate of Science degrees, at the county's expense. Area school districts provide students, transportation, facilities and funding which

allows K-12 students access to coalition programs. Harbor Branch and Smithsonian provide scientists, ocean-going research vessels, laboratories and classrooms. Industry groups provide leadership and established standards of performance that each program must meet. Finally, area politicians provide media identification, visibility and the political clout needed to gain legislative funding.

The common objective of the coalition is to bridge the gap between research, classroom teaching, extension, and practical skill development. In other words, students learn the foundations of knowledge in the classroom and then put that knowledge to work in the field or laboratory. For their effort students earn Advanced Placement credit, International Baccalaureate credit or community college credits. Student interaction with industry leaders and research scientists facilitates the sharing of faculty, coordination of K-12 and college research initiatives, dual enrollment, School-to-Work programs, science fair sponsorship, and generation of funding through grants and legislative appropriation. Through the collaborative efforts of the coalition, special legislative allocations, state educational supplements and grants, such as the National Science Foundation, have been earned. These funds would not have been made available if not for the collaborative partnership.

It is easy to see that K-12 students benefit greatly from the Research and Education Coalition. However, all participants benefit as well. University researchers benefit from student internships and School-to-Work programs that provide free lab assistants, equipment and support funding. In addition, interaction with researchers from other institutions and industry, as well as the political world, provide avenues for additional funding and collaboration. Faculty members with extension appointments benefit from increased access to current industry leaders, future leaders and the research community. Community colleges benefit from the increase in student

enrollment brought-on by dual enrollment programs, and benefit, as do universities in general, from a more academically enriched student body. County school districts benefit from the enhanced rigor of coursework supplemented by college level instruction, laboratory and field study, and allows for magnet school development. Industry benefits by having access to a more highly trained workforce, which adds to political stability.

Westwood Agricultural Academy Advisory Council

The Westwood Agricultural Academy Advisory Council was established by members of the agricultural community to develop an academy within the area high school solely dedicated to training students in agriculture. The council is composed, in part, by veterinarians, animal scientists, university and college faculty, extension agents, key agribusiness leaders from the livestock, fruit and vegetable industry, school board members, and high school teachers. The members of this coalition have assisted in the development of an industry-standard based curriculum, one that meets Florida Sunshine State Standards and provides students with the hands-on training industry partners require. Training modules are broken into lecture and lab components, with lecture responsibilities being shared by high school instructors, university faculty and industry experts. Once the lecture component has been mastered, the lab component is started. This component entails working in the field, grove or lab, depending on the task. Some modules will include elements of all three tasks. Each year, students work through corresponding modules, but each year the modules are more complex.

Coalition members benefit from the interaction with industry and community leaders and from access to improved training facilities. Extension programs that rely on livestock pens and field demonstrations have found the agricultural farm to be an excellent place to hold meetings

and training in-services. Industry leaders are excited about the improved quality of graduates exiting the program, as are the university and community colleges who have hired agricultural assistants and biological scientists from the program. The program has generated over \$500,000 in external funding for program support and development as a result of the coalitions efforts, with an additional \$4.5 million in funding requests currently being considered.

GIS Training Program

The GIS Training Program established a grant funded center for training students on Global Positioning System technologies applied to agriculture. A dedicated classroom was established at a local high school and equipped with laptop computers, software, plotters, soil analysis materials and a vehicle to map out groves and environmentally sensitive areas. Local tractor dealers, fertilizer and chemical sprayers, and growers were recruited to provide hands-on experience and application of the technology. University extension faculty provided expertise in the area of precision agriculture and assisted with grant writing and program development. Research faculty assisted with the technical aspects of GIS training and provided field experience for students involved in the program. Researchers were aided by student experts in the mapping and analysis of research plots.

Funding for the program was generated by a grant that provided over \$100,000 to the program. As a result of this program, students are being trained to fill a vital need within the agricultural community.

Conclusions

Agricultural education has evolved from “watch-me-and-learn” to theoretical lecture to experiential learning (Trede and Andreasen). Subject matter has grown across discipline and national boundary, so new educational approaches must be examined that integrate the sciences and include those in education, industry and the public sector (Wolf and Schaffner). This paper examined the formation of educational coalitions that become mutually inclusive groups of vested individuals with one goal or mission in common --- the transfer of knowledge and skill through interaction and hands-on experimentation. This symbiotic relationship must benefit all involved parties and provide students with a living laboratory. Students learn from those that are doing and by doing. This brings good science to life. Agribusinesses are then supplied with well-trained employees and agricultural leaders.

References

Coalition for Science Literacy. Available <http://w3.usf.edu/~sl/CSL/>.

Cushner, Kenneth, Averil McClelland and Philip Safford, *Human Diversity in Education*, 2nd ed., McGraw-Hill, New York, NY, 1996.

Davis, Barbara G., *Tools for Teaching*, San Francisco, CA, Jossey-Bass Publishers, 1993, p. 147.

Krebs, Candace, "Early Intervention," *Hogs Today*, September 1998, pp. 22-23.

McKeachie, Wilbert, *Teaching Tips*, 9th ed., D.C. Heath & Company, Lexington, MA, 1994

Trede, Larry D. and Randall J. Andreasen, "An Analysis of Experiential Learning and Instructional Techniques in AgEdS450 at Iowa State University," *NACTA Journal*, (44)4, December 2000, pp. 35-40.

Wolf, Marianne McGarry and David J. Schaffner, "Curriculum Development: Starting with the Marketplace," *NACTA Journal*, (44)3, pp. 60-67.