

# An Emerging Arena: Preparing Agricultural and Natural Resource Outreach Professionals to Conduct Public Issues Education Programs

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## Abstract

This paper examines the categories of skills necessary to conduct Public Issues Education programs that address complex and contentious natural resource issues facing communities. Skills of effective Public Issues Educators are presented and a survey methodology is used to classify, characterize and describe the skills needed. Statistical tests conducted using survey data collected at the 2003 National Association of County Agricultural Agents conference indicate that the skills needed to do this kind of work can be characterized as 1) facilitation, 2) interpersonal communication and 3) traditional. The analysis provides information to help land grant and agricultural college faculty to tailor curriculum to target the explicit training needs of agricultural and natural resource outreach professionals engaged in community decision-making and problem solving.

## Introduction

Agricultural and natural resource outreach professionals are confronted with complex and contentious public issues in their communities involving land use, water quality, food safety and community development, to name a few. Increasingly, stakeholders involved in these situations differ significantly in terms of their knowledge and technical comprehension of the issue(s) as well as their ethnicity, personal values and even language skills. Often, policy decisions that address these issues are determined in politically volatile climates (Carpenter and Kennedy, 1988; Singletary et al., 2000; Susskind and Field, 1996).

The creation of the Cooperative Extension system in 1914, in partnership with land grant colleges, established an educational model whereby agricultural and natural resource outreach professionals relied upon their particular subject matter expertise to address rural America's problems (Kerr, 1987). And, the expert-based model was adequate if not successful in addressing the problems of farmers, farm families and in general, enhancing quality of life for rural Americans.

A number of social forces currently pressure agricultural and natural resource outreach professionals to become more dynamically engaged in community decision-making and problem solving that extends beyond problems encountered at the farm family level, however (Franz et al., 2002). Contemporary issues these professionals face are often so technically, morally and politically complex, that they cross a range of subjects, academic disciplines and personal value systems (Powers and Pettersen, 2001).

Traditional expert-based outreach education programs still suit many situations that involve simple questions and answers. However, new skills are required in situations where issues are more complex, the solutions are not readily available and a larger more diverse number of stakeholders are involved. This is especially true when stakeholders disagree about the nature of the issue or the issues are so technically complex that scientific debate clouds the process of finding solutions (CSREES, 2002; Singletary et al., 2000).

Public Issues Education provides a structure for outreach programs designed to educate citizens in learning how to address complex and often controversial issues (Dale and Hahn, 1994; Sachs et al., 1993). The structure helps citizens learn how to work together to identify and clarify the issue(s); examine various choices for managing the issue; implement a choice and; evaluate its impacts in resolving the problem. The Public Issues Educator can play a variety of roles including facilitator, teacher, researcher and information provider. The educator does not advocate any particular solution but instead provides a neutral, supportive atmosphere for a collaborative problem solving process. There is a knowledge base and set of skills needed to conduct effective Public Issues Education programs that reach beyond the knowledge and skills required to conduct expert-based outreach programs, however (Hahn 1988, 1990; Public Issues Education Task Force, 2002).

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### **Purpose and Objective**

This purpose of this study was to: 1) examine what kinds of skills are needed to conduct effective Public Issues Education programs and 2) determine if there are underlying relationships between skills that can be isolated, classified and characterized. The objective of this research is to help land grant and agricultural colleges tailor curriculum to better prepare agricultural and natural resource outreach professionals to undertake this challenging and important work. At the least, this research may help to clarify and substantiate those skills that are necessary to conduct effective educational outreach programs. A clearer understanding of the skills will help to improve professional development opportunities that target agricultural and natural resource outreach professionals engaged in community decision-making and problem solving.

Specifically, this research reports the results of a survey conducted at the 2003 annual conference of the National Association of County Agricultural Agents (NACAA). This is a professional group of extension agents and includes both community-based or field faculty as well as campus-based faculty. Retired agents also participate in the annual conference. The purposes of the NACAA annual meetings are to share program ideas, recognize achievements, provide professional improvement workshops and plan future programs. Since Public Issues Education is an emerging field, and this meeting is one of the largest of its kind for agriculture and natural resource professionals from all subject matter interests, this group was determined to be most appropriate for gathering data from experienced outreach professionals.

### **Methods**

#### **Instrumentation**

For the purpose of this study, a questionnaire was developed. Questions asked examine what kinds of skills are necessary to conduct effective Public Issues Education programs.

Questions about skills are based upon a set of core competencies developed by the National Public Policy Education Sub-committee on Public Issues Education [Task Force]. This national group is comprised of extension professionals and academic faculty affiliated with land grant institutions actively practicing outreach education focusing on Public Issues Education programs. The Task Force has collaborated since 1999 to determine and develop a set of skills or core competencies needed to conduct effective Public Issues Education programs. Core competencies include the following:

- Collect and interpret information about issues, audiences and educational settings
- Design Public Issues Education programs
- Communicate effectively
- Facilitate group discussions and decision-making

- Manage and transform conflict
- Work with scientific and technical information
- Create an environment of professionalism (Ayres, et al., 2002).

A complete description and explanation of the core competencies is available through the Public Issues Education website ([www.publicissueseducation.net](http://www.publicissueseducation.net)).

Members of the Task Force selected and adapted from the core competencies a list of specific skills for this study. This list of skills comprised the 17 items in the questionnaire. In addition, participants were asked to indicate number of years of professional experience. Participants were asked to indicate whether they were county agents, state or area extension specialists, federal or state extension administrators or retired.

Members of the Task Force in Nevada, Oregon and Washington reviewed earlier drafts of the questionnaire. These Task Force members reviewed and approved the final draft. Finally, a panel of three university-based faculty members in Nevada familiar with Public Issues Education reviewed the final questionnaire. Changes were made based upon their recommendations to increase content validity. The purpose of these reviews was to identify missing skills and to check for clarity and comprehension of survey questions.

The survey included 17 items about skills needed to conduct effective Public Issues Education programs. Using a five-item Likert scale of one (not very skilled) to five (very skilled), extension agents were asked to rate their current level of skills to practice Public Issues Education (see Table 1).

#### **Population**

The population consisted of NACAA members who attended the annual meeting held in Green Bay, Wisconsin in July 2003. Rather than surveying the entire group of 4,000 active members and 2,700 retired lifetime members (NACAA Headquarters, 2003), a sub-group of approximately 120 members who voluntarily participated in a Public Issues Education workshop was surveyed. This subgroup was selected because of their interest and experience with Public Issues Education.

In many ways, county agents are in an ideal position to educate and directly assist their counties and communities with complex and controversial public issues. This has been true especially in the natural resource arena regarding water and land use issues. Because of this experience/interest, county agents are in a unique position to consider the skills necessary to do this kind of work based on their field experiences. That is, the subgroup that sought out this special training has tried various facets of this kind of work and have experienced and learned from their successes and failures.

**Data Collection**

The survey was administered following a 45-minute presentation on Public Issues Education. The purpose of the presentation was to define Public Issues Education as an approach to outreach programming designed to educate and assist citizens in managing complex natural resource issues. The presenter explained the emerging role of Public Issues Education in outreach education, outlined the various roles educators can assume and explained the set of skills identified as necessary to conduct effective Public Issues Education programs. The survey listed those skills and asked the professionals to rate their current skill level.

Selected facilitators distributed the survey questionnaire following the lecture and asked the participants to return the completed questionnaire to them before leaving the session. Selected facilitators who implemented the survey did not participate in the survey, serve as instructors, speakers or in any way serve as experts on the subject. They were instructed to explain the purpose of the survey, ensure confidentiality to participants and thank them for their participation.

The survey featured a printed questionnaire that included instructions and an exemption statement. A statement of exemption printed on the questionnaire explained that voluntary completion of the questionnaire indicated their compliance to participate in the survey. The questionnaire did not request any personal information from participants beyond years of professional experience and type of position held nor did the researchers track the participants for further questioning. To provide a contact in the case of questions or concerns on the behalf of survey participants, contact

information for the principal investigator appeared on the questionnaire along with the instructions for completing the questionnaire. This anonymous approach to research protocol received exemption from the University of Nevada, Reno Office of Human Subjects Internal Review Board and did not require additional signed consent forms.

**Procedures**

The completed questionnaires served as the data source for this study. The data were analyzed utilizing the Statistical Package for Social Sciences (SPSS, Version 11.0) for Windows XP. Cronbach's coefficient alpha (CCA) was used to estimate internal consistency of the 17 Likert-type scale items. The Cronbach score for the 17 items was high ( $r = .93$ ). This score

**Table 1. Questionnaire and Instructions for Public Education Skill Survey**

Increasingly, Extension professionals are drawn into public conflicts involving complex issues, multiple stakeholders and sometimes even impending legal action. Effective participation by Extension faculty often requires skills beyond one's subject matter expertise, including helping clientele and stakeholders learn about the complexity of the issue and how to collaboratively work together to reach satisfying solutions. Please take a few moments to provide input on the following skills regarding Public Issues Education.

Your participation in this survey is voluntary and confidential. Completion of this evaluation implies your consent to participate. [Contact information for researcher here.] Thank You!

The following skills are useful for Extension professionals who do Public Issues Education. On a scale of 1 to 5 with 1 being "not very skilled" and 5 being "highly skilled," assess your current level of skills to do this work.	Not Very Skilled		Highly Skilled		Don't Know	
	1	2	3	4	5	DK
1. Facilitation skills including: keeping participants engaged and on task and protecting people and their ideas from attack	1	2	3	4	5	DK
2. Organize educational events and materials	1	2	3	4	5	DK
3. Involve technical expertise from within the university	1	2	3	4	5	DK
4. Involve technical expertise from outside the university	1	2	3	4	5	DK
5. Bring in speakers with nontraditional views about the conflict	1	2	3	4	5	DK
6. Help stakeholders clarify the issues	1	2	3	4	5	DK
7. Acknowledge political relationships among stakeholders	1	2	3	4	5	DK
8. Help stakeholders work through a sequence of steps to reach a desired outcome	1	2	3	4	5	DK
9. Work with stakeholders to create and follow a set of ground rules for working together	1	2	3	4	5	DK
10. Monitor your own communication behavior	1	2	3	4	5	DK
11. Listen actively and respectfully to opposing views	1	2	3	4	5	DK
12. Knowledge of collaborative decision-making processes	1	2	3	4	5	DK
13. Help participants move from advocating their solution to learning about a number of possible solutions	1	2	3	4	5	DK
14. Work with stakeholders to identify data needs	1	2	3	4	5	DK
15. Recognize importance and limitations of scientific data	1	2	3	4	5	DK
16. Separate your personal values from your professional role in conflict	1	2	3	4	5	DK
17. Demonstrate sensitivity to stakeholder diversity including	1	2	3	4	5	DK

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indicates that there was high internal consistency between variables (Carmines & Zeller, 1979).

## Results and Discussion

### About the Participants

The majority of respondents, 77 percent (n = 86), indicated that they were employed as county agricultural agents. Approximately 12 percent (n = 14) were state or area extension specialists while 3 percent (n = 3) were federal or state extension administrators. Approximately 7 percent (n=9) were retired extension professionals, presumably former county agents, who maintained their NACAA membership and continued to attend annual meetings.

In terms of years of professional experience,

responses indicated that the participants were relatively experienced. Only 26 percent had 15 or fewer years of professional experience, while 26 percent had 16 to 21 years experience, 24 percent had 22 to 28 years and 21 percent had 29 plus years of experience. In summary, 64 percent of the participants had 16 or more years of professional experience.

### About the Skills

A statistical test (Spearman's rho) was conducted to measure the degree of correlation among the skills listed and high inter-correlations between the variables were found. A factor analysis was then conducted to reduce the data and to isolate and identify the most important determinants associated

with a particular skill needed to conduct effective Public Issues Education programs (Nie, et al., 1975). This more rigorous analysis was preferable to a simple listing of skills ranked important by respondents. The purpose of the factor analysis was to provide a deeper, more meaningful categorization of skills, rather than a rank list of skills. For example, even if respondents ranked communication skills as important, communication skills alone are not enough to enable effective Public Issues Education programs.

Results of the factor analysis (maximum likelihood extraction, equamax rotation) reduced the data into three groups that characterize the types of skills necessary to conduct effective Public Issues Education programs (Nie, et al., 1975). These three groups of skills can help to identify, describe and formulate curriculum targeting the training needs of agricultural and natural resource

**Table 2. Factor Matrix Loading Indicating Skill Groups**

Skills Needed to Conduct Public Issue Education Programs	Facilitation Skills	Interpersonal Skills	Traditional Skills
1. Facilitation skills including: keeping participants engaged and on task and protecting people and their ideas from attack	[.55] <sup>z</sup>	.14	.20
2. Organize educational events and materials	.23	.10	[.68]
3. Involve technical expertise from within the university	.21	.15	[.75]
4. Involve technical expertise from outside the university	.22	.24	[.59]
5. Bring in speakers with nontraditional views about conflict	.45	.01	.31
6. Help stakeholders clarify the issues	[.79]	.21	.16
7. Acknowledge political relationships among stakeholders	[.66]	.33	.18
8. Help stakeholders work through a sequence of steps to reach a desired outcome	[.73]	.21	.32
9. Work with stakeholders to create and follow a set of ground rules for working together	[.61]	.31	.15
10. Monitor your own communication behavior	.41	.48	.11
11. Listen actively and respectfully to opposing views	.15	.50	.29
12. Knowledge of collaborative decision-making processes	[.67]	.41	.27
13. Help participants move from advocating their solution to learning about a number of possible solutions	[.81]	.26	.22
14. Work with stakeholders to identify data needs	[.61]	.29	.18
15. Recognize importance and limitations of scientific data	.29	.34	.25
16. Separate your personal values from your professional role in conflict	.31	[.66]	-.02
17. Demonstrate sensitivity to stakeholder diversity including gender, ethnic and cultural differences	.15	[.79]	.21

<sup>z</sup> Brackets [ ] denote variables which loaded high on one factor and low on others.

professionals engaged in community decision-making and problem solving.

Results for first factor or grouping, characterized as facilitation skills explained approximately 45 percent or nearly half of the variance. Specifically, these are facilitation skills and include: keeping participants engaged and on task and protecting people and their ideas from attack; helping stakeholders clarify the issues; working with stakeholders to create and follow a set of ground rules for working together; knowledge of collaborative decision-making processes; helping participants move from advocating their solution to learning about a number of possible solutions and; working with stakeholders to identify data needs.

Within the facilitation skills group, the skill/variable with the highest factor loading (.81) was the ability to help participants move from advocating their solution to learning about a number of possible solutions. This single finding may best characterize and describe a key skill needed in order to effectively facilitate and design a Public Issues Education program. Facilitator skills with second and third highest factor loadings were helping stakeholders clarify issues (.79) and helping stakeholders work through a sequence of steps to reach a desired outcome (.73). Again, these skills characterize classic facilitation skills that involve working with groups of people in a positive, structured setting.

The second factor or grouping, which accounted for 11 percent of the variance, characterized as interpersonal communication skills, describes individual communication skills. These skills/variables include separation of personal values from the professional role in conflict and demonstrate sensitivity to stakeholder diversity including gender, ethnic and cultural differences.

The third factor or grouping accounted for seven percent of the variance is best described as traditional outreach skills. Interestingly, these skills/variables describe the traditional expert-based model of outreach programming. These skills include organizing educational events and materials, involving technical expertise from within the university and involving technical expertise from outside the university.

## **Summary**

A survey of a self-selected group of agricultural extension agents who practice or are interested in Public Issues Education reveal that these professionals have skills that enable them to deal coincidentally with technical complexity, human diversity and political sensitivity in a dynamic environment. Individually, they are effective communicators who can competently manage group discussions in difficult situations.

One may assume various roles, depending upon the issue and the Public Issues Education program. These roles include facilitator, teacher, researcher

and information provider. The design of a Public Issues Education program should strive to help citizens clarify issues, establish goals, discuss points of conflict, brainstorm and consider alternative outcomes, make informed fair choices, implement their choices and evaluate the impacts of their decisions (Sachs, et al., 1993).

Effective outreach education programs that are designed to assist communities in addressing complex issues require skills that extend beyond any one particular academic discipline or subject matter expertise. In various combinations, these skills enable effective outreach education using a Public Issues Education structure. This structure can help citizens to learn about the public issues at stake and to collaborate to reach satisfying solutions.

Statistical tests conducted using survey data collected at the 2003 NACAA professional improvement conference indicate that the data can be reduced to three groups that best characterize the skills a subgroup of extension professionals indicate they need to conduct Public Issues Education programs. This analysis helped to identify, clarify and describe skills that typify those needed to do this kind of work. The analysis also provides critical information to enable land grant and agricultural college faculty to tailor curriculum to target the explicit training needs of current and future agricultural and natural resource professionals who engage in community decision-making and problem solving.

There are a number of important implications for land grant and agricultural college faculty. Public Issues Education is emerging as a focus area for outreach education efforts nationwide. Some critics of outreach education have gone so far as to suggest that the traditional expert-based model is out-of-date and no longer effective. The level of prominence of Public Issues Education within the land grant teaching, research and outreach model remains to be seen. It is clear, however, that land grant and agricultural colleges can play a vital role in preparing individuals for agricultural and natural resource careers in which they can impact community level decision-making and problem solving.

For those students interested in preparing themselves for what may become a new age for outreach education, facilitation skills are perhaps most needed. However, those professionals with more traditional experience will find that their subject expertise combined with problem-solving skills remain important if viewed within the context of Public Issues Education programs. The Public Issues Education model suggests that rather than recommending a single solution to a problem, the educator help citizens learn to identify a number of possible solutions. They may also help participants learn how to consider and value available options rather than advocating a particular solution to the problem.

Other facilitation skills will also be important for agricultural and natural resource professionals

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working in Public Issues Education. Helping stakeholders clarify issues and work through steps to reach a desired outcome are needed also. Examples of successful Public Issues Education programs suggest moving toward a win-win situation for all stakeholders. This requires learning about a number of possible solutions and working together to decide what approaches are acceptable.

Public Issues Education is becoming increasingly important as a growing population compete for fewer natural resources. Agricultural and natural resource outreach professionals are uniquely positioned to facilitate the productive use of natural resources if identified training needs can be implemented. The information produced from this study should also be of critical importance to land grant and agricultural college administrators who allocate resources and funds to support training opportunities for current professionals.

Further research may determine if the skills needed to conduct Public Issues Education programs are similar to those needed for private sector employees working as consultants with corporate agriculture enterprises. Corporate level agriculture will face increased competition for water and land resources from developer interests as well as environmental preservationists. Graduates from land grant and agricultural colleges who work with these firms as consultants may find themselves in the midst of controversy involving multiple, diverse stakeholder groups and complex issues. Possessing basic interpersonal communication and facilitation skills may go a long way in strengthening their employment skills as private consultants in this increasingly contentious and competitive environment.

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