

## **An Assessment of South Carolina Agriculture Teachers' Inservice Needs and Perceived Competencies**

K. Dale Layfield  
Thomas R. Dobbins  
Clemson University

### **Abstract**

The purpose of the study was to determine current inservice needs of beginning and experienced agriculture teachers in South Carolina. The target population of the study consisted of all secondary agriculture teachers in South Carolina. Based on the Borich Needs Assessment Model, a modified list of 50 competencies from previous research was developed to assess needs of South Carolina teachers (N=105) during the 1999-2000 academic year. Using a census population, the perceived level of importance and perceived level of competence of the 50 competencies of the teachers were measured. To determine specific needs, beginning teachers ( $\leq 5$  years experience) and experienced teachers were analyzed separately. Overall inservice needs were analyzed and ranked using Mean Weighted Discrepancy Scores (MWDS). The top five competencies in need by experienced agriculture teachers included: using computers in classroom teaching (3.95); preparing FFA degree applications (3.91); preparing proficiency award applications (3.83); using multimedia equipment in teaching (3.60); teaching record-keeping skills (3.19). In contrast, beginning teachers listed the following top five competencies in need: utilizing a local advisory committee (5.56), developing local adult education programs (5.19), organizing fund raising activities for the local FFA chapter (5.18), preparing agriculture/FFA contest teams (4.73), developing SAE opportunities for students (4.51). When analyzing inservice needs of beginning and experienced teachers, five of the top 10 competencies were found to be the same: developing local adult education programs; developing SAE opportunities for students; preparing FFA Degree applications; completing reports for local/state/federal accountability, and preparing proficiency award applications. Regarding beginning agriculture teachers, six of the top 10 competencies identified in this study were also identified by Garton and Chung's (1995) study of beginning agriculture teachers in Missouri. Specific recommendations for inservice of beginning and experienced agriculture teachers were made: experienced agriculture teachers should be targeted for inservice programs that expose them to FFA/youth development issues; development of related program administration and FFA/SAE/Young Farmer coursework in a distance education format may help reduce teacher travel; teacher educators in the agricultural education program at Clemson should develop graduate courses that address program administration needs and FFA/SAE/Young Farmer program development, and the teacher education program and the state agriculture education division of the State Department of Education should work together to address the top 10 inservice needs of all South Carolina agriculture teachers.

### **Introduction and Theoretical Framework**

Our aging population, its growing diversity, changing career patterns, and advances in science and industry have all contributed to the changing nature of adult education. Education is

no longer viewed as preparation for productive adulthood; it is increasingly being seen as a lifelong necessity for personal and social well-being (Rachal, 1989). Without question, teachers are faced with challenges trying to provide an adequate learning environment and prepare their students for productive lives in today's fast-paced world. Consequently, teachers are among those for whom learning is now more than ever a lifelong proposition. There have been ways identified to train and retrain teachers, such as college courses, correspondence courses, self-learning experience, and inservice. That is why so many educational researchers aim their studies at evaluation of teacher training to measure its effectiveness.

Borich (1980) pioneered his Needs Assessment Model in an effort to design such a survey instrument that would allow one to collect data that can be weighted and ranked in order of priority. By doing so, responses can be linked to a practical decision framework to improve a training program. Borich defined a training need as "a discrepancy between an educational goal and trainee performance in relation to this goal." He further suggested that training programs could utilize his model by employing the two extreme position: *what is* (the measured behaviors, skills, and competencies of trainees) and *what should be* (the goals of the training program). According to Borich, the discrepancy between these two positions can be used as an index to determine the effectiveness of training. The Borich Needs Assessment Model involves 4 steps:

1. List Competencies;
2. Survey Inservice Teachers;
3. Rank Competencies, and
4. Compare High Priority Competencies with Training Program Content.

In recent years, several studies have used Borich's needs assessment model to identify inservice needs of agriculture teachers (Garton & Chung, 1995; Edwards & Briers, 1999; Mundt & Connors, 1999). Garton and Chung (1995) used the Borich Needs Assessment Model in their study of beginning teachers in Missouri. Their study revealed 12 of the 50 professional competencies in greater need for inservice: completing reports for local/state administrators, motivating students to learn, preparing FFA degree applications, developing an effective public relations program, preparing proficiency award applications, teaching agriscience, utilizing a local advisory committee, developing SAE opportunities for students, using computers in classroom teaching, supervising students' SAE programs, teaching using experiments, and conducting local FFA chapter activities.

However, Garton and Chung also found that 10 of the 50 professional competencies were rated to be less of a need for inservice: teaching knowledge and skills in agricultural construction, teaching about and agriculture's relationship with the environment, teaching knowledge and skills in plant science, conducting parent/teacher conferences, using multimedia equipment in teaching, implementing VIMS in the local program, planning and conducting student field trips, developing knowledge and skills in animal science, teaching knowledge and skills in soils and soil management, and teaching equine science.

Edwards and Briers (1999) also used the Borich Needs Assessment Model for their study of entry-phase agriculture teachers in Texas. The findings of that study were on many levels consistent with the above-mentioned study by Garton and Chung. For example, 4 out of top 15 competencies in the Edwards and Briers study were as follows: assisting students in preparing for and succeeding in FFA degree and award program, using the Internet as a teaching tool,

implementing Tech-Prep and other S-T-W initiatives into the program, and integrating CAD into mech.

Mundt and Connors (1999) conducted a three-stage Delphi study of the winners of the NVATA Outstanding Young Member Award that was aimed at identifying problems and challenges associated with the first years of teaching agriculture. A technique was used in that study. The top 8 categories out of a list of 23 problems and challenges were as follows: managing the overall activities of the local FFA chapter, building the support of faculty, counselors, and administrators within the school system, balancing professional and personal responsibilities and maintaining personal motivation and a positive outlook, recruiting and motivating students in agricultural education, using proper classroom management strategies and dealing with student discipline problems, properly managing time, paperwork and meeting deadlines, building support from parents, organizations and adult groups within the community, and organizing and managing safe and attractive facilities.

Barrick, Ladwig, & Hedges (1983) stated that the identification of relevant topics can be crucial in providing agriculture teachers with quality inservice programs. In order to provide quality inservice programs, agriculture teachers' needs have to be monitored on a regular basis (Birkenholz & Harbstreet, 1987). According to Waters and Haskell (1989), "gathering data from potential clientele and actively involving them in the process of identifying potential educational programs, increases the likelihood of implementing relevant educational programs; thus, increasing the likelihood of achieving appropriate outcomes" (p. 26)

As can be seen from the literature review, many recent studies focused on needs of beginning agriculture teachers. In addition to these studies, however, more inservice needs assessment research on experienced teachers is necessary. Following the many changes in agriculture in general and re-building of agricultural education staff in South Carolina state supervision and faculty at Clemson University in particular, inservice needs assessment has become imperative for both groups of teachers.

### **Purpose and Objectives**

The purpose of this study was to identify and describe specific inservice needs of beginning and experienced agriculture teachers in the state of South Carolina. The objectives for the study were to:

1. Describe the demographic profile and program characteristics of South Carolina agriculture teachers (age, gender, highest degree earned, years of teaching, and curriculum taught);
2. Identify and describe the perceived inservice needs of South Carolina experienced agriculture teachers;
3. Identify and describe the perceived inservice needs of South Carolina beginning agriculture teachers; and
4. Compare and contrast the perceived inservice needs of experienced South Carolina agriculture teachers to those of South Carolina beginning agriculture teachers.

## Methods and Procedures

The population for the study consisted of all (beginning and experienced) agriculture teachers in the state of South Carolina (N=105). For the purpose of this study, beginning teachers were considered to have between one and five years of teaching experience. Experienced teachers were considered to be those with more than five years of teaching experience. The list of agriculture teachers was obtained from the 1999-2000 South Carolina Directory of Agricultural Educators. Census populations were used and as such the findings from this study can only be generalized to the population.

The instrument used in the study was developed on the basis of the Borich Needs Assessment Model (Borich, 1980). A list of 50 professional competencies from previous research (Garton & Chung, 1995; Kahler, 1974; Shippy, 1981; Hachmeister, 1981; Claycomb & Petty, 1983; Veeman, 1984; Birkenholz & Harbstreit, 1987; Mundt, 1991; Valli, 1992; Talbert, Camp & Heath-Camp, 1994) was modified to meet needs of South Carolina teachers.

The teachers were asked to rate on a Likert-type scale the 50 professional competencies related to inservice needs. Number 1 on the scale signified the least important competency and number 5 was the most important competency. The teachers were also asked to rate their self-perceived levels of the 50 professional competencies by using a Likert-type scale with number 1 meaning the least proficient in a particular competency and number 5 as the most proficient. The instrument also contained sections related to the Internet and computer software access, time of inservice delivery, and teachers' demographic information.

A panel of experts was asked to review the instrument for content and face validity. The panel consisted of faculty members in the Department of Biology Instruction and Agricultural Education at Clemson University. A post-hoc reliability analysis of the inservice needs section of the instrument was calculated for the beginning teachers (importance level .83; competence level .96) and the experienced teachers (importance level .97; competence level .98).

Data were collected by sending the instrument and cover letter to all teachers in the study during March, 2000. To expedite the return rate, two options suggested -- teachers could return the completed instrument by fax or return it to their regional coordinators. The response rate for the study was 78 (74%). A t-test of the inservice needs and competency assessments revealed no significant differences between early and late respondents for both beginning and experienced teachers. Therefore, the findings of this study can be generalized to the entire population of both categories of agriculture teachers in South Carolina.

Statistical data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS 8.0) for Windows and Microsoft Excel 98. Descriptive statistics (frequencies, means, and standard deviations) were used to analyze data. A Mean Weighted Discrepancy Score (MWDS) was calculated to describe the overall rankings for each of the competencies.

To determine the Mean Weighted Discrepancy Score (MWDS), the following statistical methods were used with Microsoft Excel 98. A discrepancy score was calculated for each individual on each competency by taking the importance rating minus the ability (competency) rating. A weighted discrepancy score was then calculated on each individual for each of the professional competencies by multiplying the discrepancy score by the mean importance rating. A mean weighted discrepancy score for each of the competencies was calculated by taking the sum of the weighted discrepancy scores and dividing by the number of observations. Using the mean weighted discrepancy scores, the 50 competencies were then ranked.

## Results and Findings

Objective 1 of the study was to describe the demographic profile and program characteristics of South Carolina agriculture teachers. The average number of years teaching was 14.7 years, while the most prevalent age group of the respondents was 41-50 (31.2%), followed by the 31-40 year age group (29.9%). Eighty-seven percent of the respondents were male and the most common academic degree held was a masters degree (59.7%), followed a bachelors degree (31.2%).

Regarding program characteristics, the primary curricula taught during the 1999-2000 school year was in the category of Horticulture and Agricultural Production (24.4%) followed by Agricultural Mechanics (16.7%), Environmental/Natural Resources (10.3%) and Agriscience (10.3%). Curricula of other programs included: Turfgrass (5.3), Forestry (1.3%), Agribusiness (1.3%), and Other (5.1%).

Teachers were also asked to describe preferred inservice time for offerings. The majority of teachers (66.7%) ranked summer as their first choice for workshop/seminar delivery. The winter conference was identified as the second preferred choice (16.9%), followed by district meetings (11.7%), fall (5.2%), and spring semester (1.3%).

Objective 2 of the study was to describe the perceived inservice needs of experienced South Carolina agriculture teachers using the Borich Needs Assessment Model. Table 1 provided an analysis of the inservice needs of experienced teachers, as ranked on the basis of the Mean Weighted Discrepancy Score (MWDS). The top 10 competencies included: using computers in classroom teaching (3.95); preparing FFA degree applications (3.91); preparing proficiency award applications (3.83); using multimedia equipment in teaching (3.60); teaching record-keeping skills (3.19); developing an effective public relations program (3.00); developing SAE opportunities for students (2.68); completing reports for local/state/federal accountability (2.65); organizing a local Young Farmer Agribusiness program (2.20), and developing local adult education programs (2.04). The mean scores for the importance of inservice and competency levels were included in Table 1.

In comparison to the 10 most preferred competency needs for inservice (Table 1), the 10 least preferred included: assessing and evaluating student performance (.21); teaching knowledge and skills in plant sciences (.14); managing student behavior problems (.07); teaching knowledge and skills in soils and soil management (.00); organizing fund raising activities for the local FFA chapter (-.06); developing relations with teachers and administrators (-.20); developing knowledge and skills in the animal sciences (-.23); planning banquets (-.30); conducting parent/teacher conferences (-.89), and planning and conducting student field trips (-1.05).

Table 1.  
Inservice Needs of Experienced Agriculture Teachers Using the Borich Needs Assessment Model (N=60)

Ranking	Inservice Need	Mean Imp. Level <sup>a</sup>	Mean Comp. Level <sup>b</sup>	MWDS <sup>c</sup>
1	Using computers in classroom teaching	4.09	3.12	3.95
2	Preparing FFA Degree applications	3.98	3.09	3.91
3	Preparing proficiency award applications	3.90	2.91	3.83
4	Using multimedia equipment in teaching	3.76	3.05	3.60
5	Teaching record-keeping skills	3.98	3.10	3.19
6	Developing an effective public relations program	4.14	3.41	3.00
7	Developing SAE opportunities for students	4.12	3.39	2.68
8	Completing reports for local/state/federal accountability	3.81	3.19	2.65
9	Organizing a local Young Farmer Agribusiness program	3.88	3.24	2.20
10	Developing local adult education programs	3.95	3.43	2.04
11	Teaching about public issues regarding agriculture	3.72	3.19	1.99
12	Teaching agribusiness knowledge and skills	3.52	3.11	1.95
13	Utilizing a local FFA Alumni affiliate	3.40	2.83	1.93
14	Motivating students to learn	4.10	3.64	1.91
15	Preparing agriculture/FFA contest teams	3.93	3.53	1.89
16	Teaching using experiments	3.64	3.29	1.82
17	Supervising students' SAE programs	4.02	3.51	1.74
18	Conducting needs assessments and surveys to determine the courses that should be taught	3.59	3.18	1.73
19	Teaching students problem-solving and decision-making skills	4.03	3.64	1.60

*(table continues)*

Table 1. (continued)

Ranking	Inservice Need	Mean Imp. Level <sup>a</sup>	Mean Comp. Level <sup>b</sup>	MWDS <sup>c</sup>
20	Locating and selecting student references and materials	3.52	3.23	1.50
21	Developing a Local Program Success Model	3.60	3.34	1.47
22	Teaching knowledge and skills in small animal care	3.40	3.04	1.43
23	Teaching about agriculture's relationship with the environment	3.98	3.66	1.30
24	Teaching equine science	2.84	2.46	1.27
25	Teaching agricultural leadership	4.10	3.88	1.25
26	Coordinating activities with local agricultural organizations and activities	3.79	3.47	1.24
27	Conducting local FFA chapter activities	3.97	3.75	1.13
28	Teaching learning disabled students	3.67	3.31	1.10
29	Teaching global agriculture awareness	3.48	3.17	1.08
30	Teaching agriscience – integrating science and agriculture	3.79	3.58	1.08
31	Organizing and supervising teaching laboratories	3.83	3.55	1.06
32	Teaching environmental occupations skills	3.64	3.42	1.04
33	Developing performance based assessment instruments	3.48	3.28	0.93
34	Teaching agricultural mechanics skills	4.00	3.69	0.93
35	Teaching knowledge and skills in marketing agricultural products	3.36	3.16	0.87
36	Planning a community-based program	3.71	3.50	0.77
37	Utilizing a local advisory committee	3.98	3.79	0.76
38	Determining the content to be taught in certain courses	3.84	3.74	0.69
39	Teaching knowledge and skills in forestry	3.48	3.42	0.44
40	Teaching knowledge and skills in horticulture	3.90	3.88	0.35
41	Assessing and evaluating student performance	3.74	3.82	0.21
42	Teaching knowledge and skills in plant sciences	3.81	3.84	0.14
43	Managing student behavior problems	3.84	3.76	0.07
44	Teaching knowledge and skills in soils and soil management	3.67	3.80	0.00

*(table continues)*

Table 1. (continued)

Ranking	Inservice Need	Mean Imp. Level <sup>a</sup>	Mean Comp. Level <sup>b</sup>	MWDS <sup>c</sup>
45	Organizing fund raising activities for the local FFA chapter	3.53	3.61	-0.06
46	Developing relations with teachers and administrators	3.83	3.88	-0.20
47	Developing knowledge and skills in the animal sciences	3.28	3.40	-0.23
48	Planning banquets	3.48	3.57	-0.30
49	Conducting parent/teacher conferences	3.55	3.86	-0.89
50	Planning and conducting student field trips	3.66	3.11	-1.05

Note. <sup>a</sup> = Importance level: 1 = least important, 5 = most important

<sup>b</sup> = Competency level: 1 = least proficient, 5 = most proficient

<sup>c</sup> = MWDS: Mean Weighted Discrepancy Score

Objective 3 was to describe the perceived inservice needs of South Carolina beginning agriculture teachers as measured by the Borich Needs Assessment Model. Table 2 provided an analysis of the inservice needs of beginning teachers, as ranked on the basis of the Mean Weighted Discrepancy Score (MWDS). The top ten competencies included: utilizing a local advisory committee (5.56), developing local adult education programs (5.19), organizing fund raising activities for the local FFA chapter (5.18), preparing agriculture/FFA contest teams (4.73), developing SAE opportunities for students (4.51), preparing FFA Degree applications (4.47), developing performance based assessment instruments (4.28), completing reports for local/state/federal accountability (4.26), preparing proficiency award applications (4.05), and Supervising students' SAE programs (3.83). The mean scores for the importance of inservice and competency levels are shown in Table 2.

In comparison to the 10 most preferred competency needs for inservice (Table 2), the ten least preferred included: teaching agriscience – integrating science and agriculture (1.56); planning banquets (1.51); conducting parent/teacher conferences (1.49); teaching knowledge and skills in small animal care (1.48); locating and selecting student references and materials (1.43); teaching knowledge and skills in plant sciences (1.35); teaching agricultural mechanics skills (1.30); developing knowledge and skills in the animal sciences (1.13); planning and conducting student field trips (0.94), and teaching equine science (0.63).

Table 2.

Inservice Needs of Beginning Agriculture Teachers of Agriculture Using the Borich Needs Assessment Model (N=18)

Ranking	Inservice Need	Mean <sup>a</sup>	Mean <sup>b</sup>	MWDS <sup>c</sup>
		Imp. Level	Comp. Level	
1	Utilizing a local advisory committee	4.00	2.61	5.56
2	Developing local adult education programs	3.89	2.56	5.19
3	Organizing fund raising activities for the local FFA chapter	4.06	2.78	5.18
4	Preparing agriculture/FFA contest teams	4.06	2.89	4.73
5	Developing SAE opportunities for students	4.06	2.94	4.51
6	Preparing FFA Degree applications	3.83	2.67	4.47
7	Developing performance based assessment instruments	4.06	3.00	4.28
8	Completing reports for local/state/federal accountability	3.83	2.72	4.26
9	Preparing proficiency award applications	3.83	2.78	4.05
10	Supervising students' SAE programs	4.06	3.11	3.83
11	Developing an effective public relations program	4.33	3.50	3.61
12	Teaching record-keeping skills	3.89	3.00	3.46
13	Organizing a local Young Farmer Agribusiness program	3.56	2.61	3.36
14	Motivating students to learn	4.28	3.50	3.33
15	Teaching about public issues regarding agriculture	4.11	3.33	3.20
16	Organizing and supervising teaching laboratories	4.11	3.33	3.20
17	Assessing and evaluating student performance	4.33	3.61	3.13
18	Conducting local FFA chapter activities	3.72	2.89	3.10
19	Developing relations with teachers and administrators	4.22	3.50	3.05
20	Conducting needs assessments and surveys to determine the courses that should be taught	3.89	3.11	3.02
21	Teaching students problem-solving and decision-making skills	4.50	3.83	3.00
22	Utilizing a local FFA Alumni affiliate	3.56	2.72	2.96
23	Teaching using experiments	4.06	3.39	2.70
24	Using multimedia equipment in teaching	3.72	3.00	2.69
25	Planning a community-based program	3.83	3.17	2.56
26	Teaching knowledge and skills in horticulture	4.17	3.56	2.55
27	Teaching knowledge and skills in forestry	3.72	3.11	2.27

*(table continues)*

Table 2. (continued)

Ranking	Inservice Need	Mean <sup>a</sup> Imp. Level	Mean <sup>b</sup> Comp. Level	MWDS <sup>c</sup>
28	Determining the content to be taught in certain courses	4.39	3.89	2.19
29	Teaching environmental occupations skills	4.00	3.50	2.00
30	Coordinating activities with local agricultural organizations and activities	3.89	3.39	1.94
31	Using computers in classroom teaching	3.78	3.28	1.89
32	Teaching about agriculture's relationship with the environment	4.22	3.78	1.88
33	Teaching knowledge and skills in marketing agricultural products	3.61	3.11	1.81
34	Teaching knowledge and skills in soils and soil management	3.56	3.06	1.78
35	Developing a Local Program Success Model	3.17	2.61	1.76
36	Teaching agribusiness knowledge and skills	3.39	2.89	1.69
37	Teaching learning disabled students	3.78	3.33	1.68
38	Teaching global agriculture awareness	3.67	3.22	1.63
39	Managing student behavior problems	4.17	3.78	1.62
40	Teaching agricultural leadership	4.06	3.67	1.58
41	Teaching agriscience – integrating science and agriculture	4.00	3.61	1.56
42	Planning banquets	3.39	2.94	1.51
43	Conducting parent/teacher conferences	3.83	3.44	1.49
44	Teaching knowledge and skills in small animal care	3.33	2.89	1.48
45	Locating and selecting student references and materials	3.67	3.28	1.43
46	Teaching knowledge and skills in plant sciences	4.06	3.72	1.35
47	Teaching agricultural mechanics skills	3.33	2.94	1.30
48	Developing knowledge and skills in the animal sciences	3.39	3.06	1.13
49	Planning and conducting student field trips	3.39	3.11	0.94
50	Teaching equine science	2.83	2.61	0.63

Note. <sup>a</sup>= Importance level: 1 = least important, 5 = most important

<sup>b</sup>= Competency level: 1 = least proficient, 5 = most proficient

<sup>c</sup>= MWDS: Mean Weighted Discrepancy Score

Objective 4 of the study was to compare and contrast the perceived inservice needs of South Carolina experienced agriculture teachers to those of South Carolina beginning agriculture

teachers. An analysis of the differences between experienced teachers and beginning teachers found that five of the top 10 competencies were the same:

- Developing local adult education programs;
- Developing SAE opportunities for students;
- Preparing FFA Degree applications;
- Completing reports for local/state/federal accountability, and
- Preparing proficiency award applications.

The remaining top five competencies on which the beginning agriculture teachers had different responses were: utilizing a local advisory committee; organizing fund raising activities for the local FFA chapter; preparing agriculture/FFA contest teams; developing performance based assessment instruments, and supervising students' SAE programs (Table 3). The top five competencies on which experienced agriculture teachers differed from beginning agriculture teachers were as follows: using computers in classroom teaching; using multimedia equipment in teaching; teaching record-keeping skills; developing an effective public relations program, and organizing a local Young Farmer Agribusiness program.

Table 3.

Contrasting top competencies between beginning and experienced agriculture teachers as ranked by Mean Weighted Discrepancy Scores (MWDS)

Beginning Teachers	Experienced Teachers
Utilizing a local advisory committee	Using computers in classroom teaching
Organizing fund raising activities for the local FFA chapter	Using multimedia equipment in teaching
Preparing agriculture/FFA contest teams	Teaching record-keeping skills
Developing performance based assessment instruments	Developing an effective public relations program
Supervising students' SAE programs	Organizing a local Young Farmer Agribusiness program

### **Conclusions/Recommendations/Implications**

This study resulted in the following conclusions and recommendations.

The top 10 competencies for inservice education that were ranked by experienced agriculture teachers (see Table 1) could be summarized in the two categories: integration of technology in the classroom and youth/adult development activities (FFA, Young Farmer and SAE). Regarding beginning agriculture teachers, six of the top ten competencies identified in this study were also identified by Garton and Chung's (1995) study of beginning agriculture teachers in Missouri. These common findings were:

1. utilizing a local advisory committee;
2. developing SAE opportunities for students;
3. preparing FFA degree applications;
4. completing reports for local/state/federal accountability;
5. preparing proficiency awards applications, and
6. supervising students' SAE programs.

- Based on the findings of this study the recommendations are as follows:
- O Experienced agriculture teachers should be targeted for inservice programs that expose teachers to FFA/youth development issues;
  - O Development of related program administration and FFA/SAE/Young Farmer coursework in a distance education format may help reduce teacher travel;
  - O Teacher educators in the agricultural education program at Clemson should develop graduate courses that address program administration needs and FFA/SAE/Young Farmer program development;
  - O The teacher education program and the state agriculture education division of the State Department of Education should work together to address the top 10 inservice needs of all South Carolina agriculture teachers;
  - O The agriculture education program should study how the top inservice areas for the beginning teachers can be addressed in the preservice program, and
  - O Further needs assessment studies need to be implemented using the Borich model in order to build a baseline of research data and to validate this study and other similar studies conducted in other states.

### **References**

Barrick, R.K., Ladewig, H.W., & Hedges, L.E. (1983). Development of a systematic approach to identify technical inservice needs of teachers. The Journal of American Teacher Educators of Agriculture, 24(1), 13-19.

Birkenholz, R.J., & Harbstreet, S.R. (1987). Analysis of the inservice needs of beginning vocational agriculture teachers. The Journal of the American Association of Teacher Educators in Agriculture, 28(1), 41-49.

Borich, G.D. (1980). A needs assessment model for conducting follow-up studies. The Journal of Teacher Education, 3(3), 39-42.

Claycomb, D.M., & Petty, G.C. (1983). A three year longitudinal study of the perceived needs for assistance as ranked by vocational agriculture instructors. Journal of the American Association of Teachers in Agriculture, 42(4), 28-33.

Edwards, M.C., and Briers, G.E. (1999). Assessing the Inservice Needs of Entry-Phase Agriculture Teachers in Texas: A Discrepancy Model Versus Direct Assessment, Journal of Agricultural Education, 40(3), 40-49.

Garton, B.L., and Chung, N. (1995). An analysis of the inservice needs of beginning teachers of agriculture. Proceedings of the 22<sup>nd</sup> Annual National Agricultural Education Research Meeting, 22, 77-83.

Hachmeister, M.H. (1981). Meeting needs of first- and second-year teachers. Proceedings of the 1981 Central States Seminar in Agricultural Education. Chicago, IL.

Kahler, A.A. (1974). Organization and instructional problems of beginning teachers of vocational agriculture. Ames: Iowa State University, Department of Agriculture Education.

Mundt, J.P. (1991). The induction year – a naturalistic study of beginning secondary teachers of agriculture in Idaho. Journal of Agricultural Education, 32(1), 18-23.

Mundt, J.P., and Connors, J.J. (1999). Problems and challenges associated with the first years of teaching agriculture: A framework for preservice and inservice education. Journal of Agricultural Education, 40(1), 38-48.

Rachal J. R. (1989). The social context of adult and continuing education. In S. B. Merriam, P. M. Cunningham (eds.), 1989 Handbook of Adult and Continuing Education. San Francisco, CA: Jossey-Bass.

Shippy, R. D. (1981). Professional competencies needed by beginning teachers of agriculture/agribusiness. Journal of the American Association of Teacher Educators in Agriculture. 22(1), 29-34.

Talbert, B.A., Camp, W.G., & Heath-Camp, B. (1994). A year in the life of three beginning agriculture teachers. Journal of Agricultural Education, 35(2), 31-36.

Veeman, S. (1984). Perceived problems of beginning teachers. Review of Educational Research, 54(2), 143-178.

Valli, L. (1992). Beginning teacher problems: Areas for teacher education improvement. Action in Teacher Education, 14 (1), 18-25.

Walters, R.G. & Haskell, L.J. (1989). Identifying staff development needs of cooperative extension faculty using a modified Borich needs assessment model. Journal of Agricultural Education, 30(2), 26-32.

# **An Assessment of South Carolina Agriculture Teachers' Inservice Needs and Perceived Competencies**

## **A Critique**

Carol A. Conroy  
Cornell University

Layfield and Dobbins addressed the in-service needs of South Carolina secondary agriculture teachers through an adaptation of the Borich Needs Assessment Model. They provided a fairly detailed conceptual framework for the study that could have been enhanced by the inclusion of a theoretical discussion of adult learning and, possibly, change theories. It consisted of a lot of lists reported from previous, similar studies. There was no inclusion of literature that might shed light on best in-service delivery mechanisms, and little to suggest why the authors chose to divide the teachers into two groups for the data analysis.

Although the section was very well written, I have some questions with the Methods and Procedures. The prior use of the Borich instrument was well documented, but no mention was made of what considerations were made in its adaptation. I also question the validity of dividing teachers into what is basically a dichotomy – those who have taught more than five years and those who have taught less than five years – as the data analysis may not allow for differences and similarities between persons at either end of the category. For instance, is there much difference between a person who has taught five years vs. 5 ½ years? And, isn't there likely to be a lot of difference between an individual in his/her first year of teaching vs. someone who has taught five years?

Data from the survey are presented well in both the text and in tables. The authors should consider not repeating tabular data in the text so that space could be utilized for substantive discussions of the results or raising additional questions left unanswered by the examination of a mean. For example, in looking at Table 1, which presents in-service needs of experienced teachers, I am curious as to what causes teachers to perceive one item as needed less than another? A response would warrant some literature review and, possibly, further inquiry, but addressing questions like this that emerge through the data analysis can enhance the discussion of the results as well as shape future research. In addition, the use of a dichotomous grouping for the teachers would be problematic in trying to draw any comparisons between the two groups, for reasons stated above.

The authors make an attempt in the Conclusions section to relate their results to prior research in this area. This section, however, should be expanded to include more than a list of a few conclusions and recommendations. Although the section title includes implications, there are none provided. In summary, Layfield and Dobbins have undertaken an effort to identify in-service needs of agriculture teachers in South Carolina, and can be commended for taking teachers' expressed needs into account.