

Inservice Study Final Report  
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The purpose of this study was to assess and prioritize the present inservice needs as well as evaluate the past inservice programming for agricultural education programs in the state of Illinois. It is also important to compare the past history of inservice programs to determine if inservice needs have changed. The results of this study were to be used to design inservice workshops and conferences for agricultural instructors in future years.

Specific objectives were developed to guide the research activities associated with this study. Those objectives are as follows:

1. To prioritize the present inservice needs of all agricultural education programs.
2. To compare present inservice needs with past inservicing programs offered to agricultural instructors.
3. To determine the effectiveness of past inservice programming to aid in future inservice development.

Methods/Procedures

The target population was all of the 307 agricultural education programs in the state of Illinois. It is important to note that a large majority of the agricultural education programs in Illinois are rural-based resulting in a large number of one-teacher departments. The study collected 198 usable responses yielding a 65% response rate.

Agricultural instructors were informed to rate each of the 56 items using a five-point Likert scale. The agricultural instructors were asked to evaluate the importance of each item as well as their competence level on each item. A response of five indicated that the item was very important and a response of one would indicate not important to the inservice needs of agricultural education programs. The same response rating was also used in assessing the competence levels.

Data analysis was determined from three different calculations. The first calculation was the *discrepancy score*, which was figured by taking the importance rating minus the competence rating for each individual on each competency. The second calculation was the *weighted discrepancy score*, which was figured by multiplying the discrepancy score by the mean importance rating. The final calculation was the *mean weighted discrepancy score*. This figure was calculated by taking the sum of the weighted discrepancy scores and dividing by the number of observations (N=198). The 56 competencies were then ranked, by using the mean weighted discrepancy score. The higher the mean weighted discrepancy score, the greater inservice need for that competency.

Results/Findings

The agricultural instructors in Illinois divided their greatest inservice needs into several categories. This indicates that their needs are not concentrated in one particular area of service. Table 1 prioritizes the present inservice needs among agricultural programs through the utilization of a Mean Weighted Discrepancy Score (MWDS). The top ten inservice needs according to agricultural instructors in Illinois are understanding liability issues associated with teaching, motivating students, knowing how to use computer technology, developing public relations, developing SAE opportunities, teaching horticulture, teaching agricultural marketing, managing student behaviors, using computers in the classroom, and teaching problem-solving/decision making skills. All of these competencies had a MWDS range of 4.57 to 2.91. These competencies can be divided into several categories, such as using technology, classroom management, instructional content, SAE's, and program development. The exciting component to these findings is that the teachers desire more knowledge acquisition in the learning process. Teachers want to know how to motivate their students, how to better manage student behaviors, and how to teach critical problem solving and decision-making skills. It is also critical to point out the need for knowledge in liability issues associated with the teaching profession.

Table 1. Prioritized Inservice Needs of Agriculture Education Programs (N=198)

Rank	Question Asked	Imp.* level	Comp.* level	MWDS*
1	53.) Understanding the liability issues associated with teaching.	4.11	3.01	4.57
2	46.) Motivating students to learn.	4.76	3.87	4.24
3	52.) Knowing computer technology/literacy.	4.40	3.63	3.41
4	20.) Developing an effective public relations program.	4.44	3.76	3.05
5	8.) Developing SAE opportunities for students.	4.27	3.56	3.02
6	10.) Teaching knowledge and skills in horticulture.	4.06	3.33	2.95
7	24.) Teaching knowledge & skills in agricultural marketing.	4.10	3.38	2.94
8	37.) Managing student behaviors.	4.49	3.84	2.94
9	4.) Using computers in classroom teaching.	4.32	3.63	2.91
10	16.) Teaching problem-solving & decision making skills.	4.52	3.90	2.80
11	38.) Determining the content to be taught in specific course.	4.37	3.77	2.66
12	54.) Modifying curriculum to IL Learning Standards.	3.77	3.06	2.65
13	9.) Teaching agribusiness knowledge and skills.	4.38	3.78	2.63
14	32.) Utilizing a local advisory council/committee.	3.96	3.28	2.62
15	21.) Teaching recordkeeping skills.	4.30	3.73	2.52
16	26.) Teaching agriscience - integrating science & agriculture.	4.38	3.83	2.51
17	17.) Teaching students with an IEP's.	3.93	3.31	2.42
18	55.) Integrating academics with other content areas.	3.95	3.33	2.35
19	49.) Preparing FFA Degree Applications.	3.99	3.41	2.34
20	50.) Preparing Proficiency Award Applications.	4.00	3.43	2.30
21	41.) Utilizing a local FFA Alumni affiliate.	3.73	3.11	2.28
22	3.) Preparing Agriculture/FFA career development events.	4.25	3.77	2.26
23	15.) Teaching using experiments.	4.26	3.73	2.22
24	12.) Organizing and supervising laboratories.	4.32	3.81	2.20
25	39.) Evaluating the local agriculture program.	4.27	3.73	2.20
26	40.) Teaching about public issues regarding agriculture.	4.09	3.57	2.11
27	6.) Implementing State Goals and Learning Standards	3.76	3.23	1.95
28	35.) Assessing and evaluating student performance.	4.35	3.90	1.95
29	25.) Conducting need assessments and surveys.	3.57	3.04	1.93
30	34.) Teaching the relationship between agric. & environ.	4.33	3.89	1.91
31	5.) Using multimedia equipment in teaching.	4.37	3.94	1.88
32	30.) Developing performance based assessment instruments.	3.56	3.03	1.83
33	51.) Teaching knowledge and skills in aquaculture.	3.12	2.55	1.83
34	27.) Locating and selecting student references and curriculum.	4.08	3.66	1.75
35	23.) Conducting local FFA activities and events.	4.48	4.10	1.68
36	43.) Teaching knowledge and skills in forestry.	3.08	2.58	1.57
37	19.) Teaching knowledge and skills in plant science.	4.39	4.05	1.51
38	47.) Developing Tech Prep Programs.	3.37	2.94	1.50
39	36.) Teaching knowledge & skills in agricultural construction.	3.75	3.37	1.41
40	29.) Teaching knowledge and skills in soils & soil management.	4.16	3.83	1.35
41	11.) Supervising students' SAE programs.	4.13	3.84	1.28
42	7.) Repairing & reconditioning agricultural mechanics tools.	3.69	3.37	1.23

Table 1 continues

Table 1 continued

Rank	Question Asked	Imp.* level	Comp.* level	MWDS <sup>a</sup>
43	45.) Developing relations with colleagues & administrators.	4.42	4.15	1.18
44	22.) Coordinating activities with local agricultural agencies.	3.93	3.63	1.17
45	56.) Completing applications for FCAE incentive funding.	4.41	4.12	1.15
46	44.) Teaching knowledge and skills in electricity.	3.87	3.59	1.08
47	33.) Teaching equine science.	3.01	2.68	0.97
48	42.) Organizing fund-raising activities.	4.08	3.87	0.96
49	31.) Developing knowledge and skills in animal science.	4.15	3.95	0.90
50	2.) Completing reports for local and state administrators.	3.82	3.63	0.79
51	14.) Teaching small gas engines.	3.55	3.40	0.58
52	18.) Conducting parent/teacher conferences.	4.08	4.03	0.27
53	13.) Conducting and teaching adult education programs	2.74	2.71	0.16
54	28.) Organizing a local Young Farmers Program.	2.24	2.21	0.10
55	48.) Planning banquets.	3.78	3.89	-0.39
56	1.) Planning and conducting student field trips.	3.99	4.19	-0.86

\*\*Note: Importance Level: 5 = Very Important, 4 = Important, 3 = Somewhat Important,

2 = Of Little Importance, 1 = Not Important

Competence Level: 5 = Very Competent, 4 = Competent, 3 = Somewhat Competent,

2 = Little Competency, 1 = Not Competent

<sup>a</sup>MWDS: Mean Weighted Discrepancy Score

The agricultural instructors were also very clear on the competencies that needed the least inservice attention. These competencies were teaching equine science, organizing fundraisers, teaching animal science, completing reports for local and state administrators, teaching small gas engines, conducting parent/teacher conferences, conducting adult programs, organizing Young Farmers Program, planning banquets, and planning field trips. All of these competencies had a MWDS rating of 0.97 to -0.86 indicating a high importance and competence ratings or a low importance and competence ratings. The instructors indicated the low emphasis in adult education and teaching equine science, but affirmed the concept that they were knowledgeable in the areas of conducting the extra-curricular activities associated with agricultural programs.

Table 2 outlines the past inservice programming over the last nine years conducted throughout the state. The competencies are ranked in the same order as in Table 1. The frequency is the number of workshops or conferences conducted in a specific competency over the past nine years. The percentage is the number of workshops or conferences conducted in a specific competency divided by the total number inservice programming conducted in the state for the past nine years. There were 171 inservice programs conducted throughout the state over the nine years. The inservice programs were divided up into the 56 competencies based upon their title or purpose. This table outlines the concentration of inservice programming within the state as well as the decision-making ability of state leadership to design the needed inservice programming.

Table 2. Frequency of Past Inservice Programming Within Competency Areas (N=198)

Rank*	Question Asked	MWDS	Frequency	Percentage
1	53.) Understanding the liability issues with teaching.	4.57	0	0.00%
2	46.) Motivating students to learn.	4.24	1	0.58%
3	52.) Knowing computer technology/literacy.	3.41	9	5.20%
4	20.) Developing an effective public relations program.	3.05	0	0.00%
5	8.) Developing SAE opportunities for students.	3.02	0	0.00%
6	10.) Teaching knowledge and skills in horticulture.	2.95	32	18.50%
7	24.) Teaching knowledge & skills in agricultural marketing.	2.94	1	0.58%

Table 2 continues

Table 2 continued

Rank*	Question Asked	MWDS	Frequency	Percentage
8	37.) Managing student behavior problems.	2.94	0	0.00%
9	4.) Using computers in classroom teaching.	2.91	2	1.16%
10	16.) Teaching problem-solving & decision making skills.	2.80	0	0.00%
11	38.) Determining the content to be taught in courses.	2.66	0	0.00%
12	54.) Modifying curriculum to IL Learning Standards.	2.65	0	0.00%
13	9.) Teaching agribusiness knowledge and skills.	2.63	1	0.58%
14	32.) Utilizing a local advisory council/committee.	2.62	0	0.00%
15	21.) Teaching recordkeeping skills.	2.52	3	1.73%
16	26.) Teaching agriscience- integrating science & agriculture.	2.51	7	4.05%
17	17.) Teaching students with an IEP's.	2.42	0	0.00%
18	55.) Integrating academics with other content areas.	2.35	1	0.58%
19	49.) Preparing FFA Degree Applications.	2.34	3	1.73%
20	50.) Preparing Proficiency Award Applications.	2.30	1	0.58%
21	41.) Utilizing a local FFA Alumni affiliate.	2.28	0	0.00%
22	3.) Preparing Agriculture/FFA career development activities.	3.26	21	12.14%
23	15.) Teaching using experiments.	2.22	8	4.62%
24	12.) Organizing and supervising laboratories.	2.20	2	1.16%
25	39.) Evaluating the local agriculture programs.	2.20	0	0.00%
26	40.) Teaching about public issues regarding agriculture.	2.11	2	1.16%
27	6.) Implementing State Goals and Learning Standards.	1.95	0	0.00%
28	35.) Assessing and evaluating student performance.	1.95	0	0.00%
29	25.) Conducting needs assessments and surveys.	1.93	0	0.00%
30	34.) Teaching the relationship between agric. & environ.	1.91	5	2.89%
31	5.) Using multimedia equipment in teaching.	1.88	3	1.73%
32	30.) Developing performance based assessment instruments.	1.83	1	0.58%
33	51.) Teaching knowledge and skills in aquaculture.	1.83	3	1.73%
34	27.) Locating and selecting student references and curriculum.	1.75	14	8.09%
35	23.) Conducting local FFA activities and events.	1.68	2	1.16%
36	43.) Teaching knowledge and skills in forestry.	1.51	5	2.89%
37	19.) Teaching knowledge and skills in the plant science.	1.51	12	6.94%
38	47.) Developing Tech Prep programs.	1.50	0	0.00%
39	36.) Teaching knowledge & skills in agricultural construction.	1.41	7	4.05%
40	29.) Teaching knowledge & skills in soils & soil management.	1.35	1	0.58%
41	11.) Supervising students' SAE programs.	1.28	0	0.00%
42	7.) Repairing & reconditioning agricultural mechanics tools.	1.23	0	0.00%
43	45.) Developing relations with colleagues & administrators.	1.18	0	0.00%
44	22.) Coordinating activities with local agricultural agencies.	1.17	0	0.00%
45	56.) Completing applications for FCAE incentive funding.	1.15	0	0.00%
46	44.) Teaching knowledge and skills in electricity.	1.08	4	2.31%
47	33.) Teaching equine science.	0.97	1	0.58%
48	42.) Organizing fund-raising activities.	0.96	0	0.00%
49	31.) Developing knowledge and skills in the animal science.	0.90	9	5.20%
50	2.) Completing reports for local and state administrators.	0.79	0	0.00%
51	14.) Teaching small gasoline engines.	0.58	1	0.58%
52	18.) Conducting parent/teacher conferences.	0.27	0	0.00%
53	13.) Conducing and teaching an adult education program.	0.16	0	0.00%
54	28.) Organizing a local Young Farmers Program.	0.10	0	0.00%
55	48.) Planning Banquets.	-0.39	0	0.00%
56	1.) Planning and conducting student field trips.	-0.86	9	5.20%

\*\*Note: The frequency was the number of inservice workshops conducted in that area over the past 9 years. The percentage was the percentage of the workshops conducted in that area from the total inservice workshops conducted in the 9-year period.

Past inservice programming in the prioritized list outlined in the Table 2 provides great insight. Thirty-six percent (N=61) of past inservice programming was concentrated in the top 20 competencies outlined in Table 1. The other 64% (N=110) of the programs were emphasized in the lower 36 competencies. However, it is important to point out that there were 32 workshops/conferences presented in the horticulture area. Teaching horticulture was number six on the prioritized list of competencies. This indicated that 19% (N=32) of the total inservice programming over the last nine years was focused on teaching horticulture. This would indicate that either the workshops were not well attended or the teachers did not need that type of inservice programming at that time. The resources indicated that 25 of the 32 workshops presented in the area of horticulture were conducted from 1991-1997. Just recently, more agricultural programs have been building new greenhouses. This is why there is still a need for horticulture inservicing. If horticulture was excluded from the top 20 competencies, 17% (N=29) of the past inservicing programs were concentrated in the other 19 competencies.

The findings indicate that there were inservice programs conducted in the top 20 competencies (excluding teaching horticulture), but not at the frequency as in the lower 36 competencies. The agricultural education line item has helped fund many new state focused curriculum projects. The line item has also helped with inservicing these new projects. As a result of this outcome, the findings indicate high levels of competence in areas of teaching using experiments, teaching agriscience, teaching plant science, teaching animal science, preparing FFA CDE's, and selecting and locating student references. All of these competencies have high importance and competence ratings as well as high frequency of inservicing programming.

#### Conclusions/Recommendations

The following conclusions are based on the findings of this study.

1. Past inservice programming in agricultural education within the state of Illinois were well designed and implemented.
2. A new inservice paradigm must be implemented to ensure that the inservice needs among agricultural education programs are achieved in the future.
3. More emphasis must be placed on classroom management and professionalism for successful inservicing programming to be achieved.

For the last nine years, inservice programming for agricultural education in Illinois has been well designed and implemented. The competencies outlined in this study that received high frequency levels of inservice were items possessing high importance and competence ratings with the exception of teaching horticulture. The outcomes of this programming resulted in competent teachers in each of these items. These items were also perceived to be areas of high importance for agricultural education programs to obtain. Items with a frequency of five or more workshops and high importance and competence ratings were teaching plant science, teaching the relationship between agriculture and the environment, teaching using experiments, locating and selecting student references, teaching animal science, teaching agriscience, preparing for CDE's, and planning and conducting field trips. All of these competencies have been the beneficiaries of the agricultural education line item. New instructional materials have been designed and distributed in these areas in association with the line item. With all new curriculum projects, inservicing is a key component in the development. However, there is also an indication that less emphasis should be placed in designing future inservice programming in these competencies.

The results of this study found a small percentage of the past inservice programming was concentrated in the present inservice needs of agricultural education programs. This would indicate that a shift in the paradigm is necessary for future inservicing programming within the state. Thirty-six percent of the past inservice programming was concentrated in the top 20 inservice needs outlined in this study. This percentage would be reduced to 17%, if teaching horticulture was excluded. Even without this exclusion, the results still indicate that the inservice paradigm has shifted to a new set of competencies.

The outcomes of the study also indicated the need to shift from instructional content to a more futuristic emphasis on classroom management and professionalism. The respondents desire more knowledge acquisition on how to manage their classroom more efficiently and how to protect their future in the teaching profession. The respondents realize the importance motivating students and implementing critical thinking, but indicate that they may need more assistance in achieving these competencies. Future

in-service programming must respect the respondents needs and desires to make their classroom environment more student friendly.

In-service programming can be a hit or more miss situation. Everyday the learning process changes. The recipients of in-service programming must be ready to accept instruction in order for behavioral changes to occur. It is recommended that these findings be adopted for future inservicing programming for agricultural education programs in the state of Illinois. It is also recommended that teacher education programs within the state adopt these findings to their agricultural education pre-service programs. The highest-ranking needs should take precedence in program planning. In addition, future studies should also compare and contrast the present in-service needs with past in-service programming to fully understand the concept of where we are; where we have come; and how do we get where we want to go!