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THE INSERVICE NEEDS OF BEGINNING TEACHERS OF AGRICULTURE AS PERCEIVED BY BEGINNING TEACHERS, TEACHER EDUCATORS, AND STATE SUPERVISORS

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Abstract

The purpose of the study was to identify and prioritize the inservice needs of beginning agriculture teachers in the state of Missouri. The target populations for the study consisted of beginning (first- and second-year) agriculture teachers in Missouri during the 1994-95 academic year (N=37) and members of the Joint State Staff in Agricultural Education, which included teacher educators and state supervisors (N=16). Census populations were used. An instrument, using the Borich needs assessment model, was developed to assess the perceived level of importance and perceived level of competence of beginning teachers regarding 50 professional competencies. Twelve of the 50 professional competencies were identified by the beginning teachers as having a greater need for inservice education. The technical agriculture competencies were ranked lower in priority for inservice when compared to professional competencies in the areas of instruction, program planning and evaluation, and program administration. In general, the ranking of the inservice needs by the beginning teachers did not correspond with the rankings of the inservice needs as perceived by teacher educators and state supervisors.

Agriculture teachers have had and continue to have a need for inservice education. Historically, inservice programs have been conducted to assist agriculture teachers, especially beginning teachers, in learning the knowledge and skills necessary to perform their teaching roles (Barrick, Ladewig, & Hedges, 1983; Birkenholz & Harbstreit, 1987; Nesbitt & Mundt, 1993). Many of these inservice programs have been developed based on previous research (Kahler, 1974; Hillison, 1977; Shippy, 1981; Hachmeister, 1981; Claycomb & Petty, 1983; Veeman, 1984; Birkenholz & Harbstreit, 1987; Valli, 1992) that identified the needs of beginning teachers. But what has been concluded by the previous research?

In a study of teachers across subject matter disciplines, Veeman (1984) identified eight problems frequently faced by beginning teachers. The problems faced by beginning teachers included: classroom discipline, motivating students, dealing with individual differences, assessing students' work, relationships with parents, organization of class work, insufficient and/or inadequate teaching materials and supplies, and dealing with problems of individual students (Veeman, 1984).

Researchers (Kahler, 1974; Shippy, 1981; Hachmeister, 1981; Claycomb & Petty, 1983; Birkenholz & Harbstreit, 1987; Mundt, 1991; Talbert, Camp, & Heath-Camp, 1994) have also identified the inservice needs of beginning agriculture teachers. Kahler (1974) concluded that all teachers, regardless of experience, placed a high priority on and expressed much difficulty with the program area entitled "classroom teaching." However, Kahler (1974) also concluded that the needs of the beginning teacher were somewhat different from those of the experienced teacher.

Hillison (1977) found that beginning teachers placed a high need for inservice on such responsibilities as completing state department

reports, planning lessons, and ordering materials for the department. Shippy (1981) and Mundt (1991) concluded that beginning teachers needed assistance in the areas of program planning, development, and evaluation; planning, execution, and evaluation of instruction; and managing student behavior. Additionally, Birkenholz and Harbstreit (1987) found that the greatest need for inservice appeared in the areas of using computers in the classroom, developing skills in agribusiness management and electricity, training agriculture/FFA contest teams, and assisting students with SAEP records.

Although many studies have provided information with regard to the inservice needs of beginning agriculture teachers, Claycomb and Petty (1983) concluded that the inservice needs of beginning teachers change over time. Furthermore, Birkenholz and Harbstreit (1987) stated that the inservice needs of beginning agriculture teachers should be assessed and prioritized on a continual basis. Therefore, research is needed to assess the inservice needs of today's beginning agriculture teachers. The results will be valuable in assessing and developing beginning teacher programs.

Purpose and Research Questions

The purpose of the study was to identify and prioritize the inservice needs of beginning agriculture teachers in the state of Missouri. The following research questions were developed to guide the study:

1. What were the beginning agriculture teachers' perceived inservice needs?

2. What were the inservice needs of beginning agriculture teachers as perceived by teacher educators and state supervisors?

3. What were the beginning agriculture teachers' preferred methods of receiving inservice education?

Procedures

The target populations for the study consisted of the beginning (first- and second-year) agriculture teachers in the state of Missouri during the 1994-1995 academic year (N=37) and members of the Joint State Staff in Agricultural Education, which included teacher educators and state supervisors (N=16). Census populations were used; therefore, sampling procedures were not utilized and generalizability of the results was limited to the populations of the study.

An instrument, using the Borich needs assessment model (Borich, 1980), was developed to assess the perceived level of importance and perceived level of competence of beginning teachers regarding 50 professional competencies that were identified by previous research (Shippy, 1981; Hachmeister, 1981; Claycomb & Petty, 1983; Veeman, 1984; Birkenholz & Harbstreit, 1987; Mundt, 1991; Valli, 1992; Talbert, Camp, & Heath-Camp, 1994). Borich (1980) maintained that a major strength of the model was that it attempted to determine the "congruence between what should be and what is, i.e. between what the teacher should be able to do and what the teachers can do" (p.42). Barrick, Ladewig, and Hedges (1983) supported using the Borich model by stating that the inservice needs of teachers should be based on more than a survey of desired felt needs and that the Borich model provided defensible data in identifying important topics in which teachers need further knowledge and skills.

The instrument was assessed for content and face validity by graduate associates, teacher educators, and state supervisors in Agricultural Education. Reliability of the instrument was .95 (Cronbach's alpha coefficient).

The beginning agriculture teachers and members of the Joint State Staff were asked to rate, using a five-point Likert scale, 50 professional competencies on the importance to the success of a

beginning agriculture teacher. A response of one indicated the competency was not important and a five indicated the competency was very important to the success of a beginning agriculture teacher. Respondents were also requested to rate the perceived competence level of beginning teachers with regard to the 50 professional competencies using a five-point Likert scale. A response of one indicated the beginning teachers were not competent and a five indicated they were very competent in performing the competency.

A *discrepancy score* for each individual on each professional competency was calculated by taking the importance rating minus the ability (competence) rating. A *weighted discrepancy score* was then calculated for each individual on each of the professional competencies by multiplying the discrepancy score by the mean importance rating.

A *mean weighted discrepancy* score for each of the professional competencies was then calculated by taking the sum of the weighted discrepancy scores and dividing by the number of observations (N=37 and N=16). The 50 professional competencies were then ranked using the mean weighted discrepancy scores.

Results

Twelve of the 50 professional competencies, as perceived by the beginning teachers, received a mean weighted discrepancy score greater than 4.0, indicating a greater need for inservice (Table 1). The 12 competencies with mean weighted discrepancy scores greater than 4.0 included: completing reports for local/state administrators (7.4), motivating students to learn (6.0), preparing FFA degree applications (5.7), developing an effective public relations program (5.5), preparing proficiency award applications (5.4), teaching agriscience - integrating science and agriculture (5.1), utilizing a local advisory committee (5.1), developing SAE opportunities for students (4.9), using computers in classroom teaching (4.5), supervising students' SAE programs (4.3), teaching using experiments (4.1), and conducting local FFA chapter activities (4.0).

Ten of the 50 professional competencies, as perceived by the beginning teachers, received a mean weighted discrepancy score less than 2.0, indicating less of a need for inservice. The 10 lowest rated professional competencies were: teaching knowledge and skills in agricultural construction (1.8), teaching about and agriculture's relationship with the environment (1.8), teaching knowledge and skills in the plant sciences (1.7), conducting parent/teacher conferences (1.7), using multimedia equipment in teaching (1.7), implementing VIMS in the local program (1.4), planning and conducting student field trips (1.1), developing knowledge and skills in the animal sciences (.8), teaching knowledge and skills in soils and soil management (.8), and teaching equine science (.4).

Members of the Joint State Staff placed a high inservice need for the beginning teachers on six of the 50 professional competencies. The six competencies with the greatest weighted discrepancy score were: managing student behavior problems (7.8), developing an effective public relations program (7.5), utilizing a local advisory committee (7.4), motivating students to learn (7.3),conducting an adult program (6.9), and repairing and reconditioning agricultural mechanics tools and equipment (6.5).

Members of the Joint State Staff placed a low priority for inservice education on seven of the 50 professional competencies. The seven lowest rated professional competencies were: developing Tech Prep programs (1.9), utilizing a local FFA Alumni affiliate (1.9), teaching agribusiness knowledge and skills (1.9), preparing agriculture/FFA contest teams (1.9), developing performance based assessment instruments (1.8), teaching equine science (1.2), and planning and conducting student field trips (-.01).

Table 1. Inservice Needs of Beginning Agriculture Teachers

Inservice Needs	Beginning Teachers Rank	Beginning Teachers MWDS[a]	Joint State Staff Rank	Joint State Staff MWDS[a]
Completing reports for local/state administrators	1	7.40	21	4.26
Motivating students to learn	2	6.02	4	7.28
Preparing FFA degree applications	3	5.73	25	3.85
Developing an effective public relations program	4	5.50	2	7.50
Preparing proficiency award applications	5	5.45	32	3.39
Teaching agriscience - integrating science and agriculture	6	5.11	22	4.00
Utilizing a local advisory committee	7	5.09	3	7.41
Developing SAE opportunities for students	8	4.85	17	4.80
Using computers in classroom teaching	9	4.52	40	2.30
Supervising students' SAE program	10	4.29	10	5.58
Teaching using experiments	11	4.10	18	4.73
Conducting local FFA chapter activities	12	4.03	16	4.80
Managing student behavior problems	13	3.90	1	7.83
Conducting needs assessments and surveys to determine the courses that should be taught	14	3.83	35	3.11
Teaching students problem-solving and decision making skills	15	3.78	12	5.14
Developing Tech Prep programs	16	3.65	44	1.98
Teaching knowledge and skills in electricity	17	3.55	26	4.80
Evaluating the local agriculture program	18	3.55	8	5.88
Organizing and supervising teaching laboratories	19	3.51	7	5.98
Determining the content that should be taught in specific courses	20	3.39	30	3.48
Teaching recordkeeping skills	21	3.29	11	5.30
Preparing agriculture/FFA contest teams	22	3.29	47	1.92
Coordinating activities with local agricultural organizations and agencies	23	3.17	20	4.29
Teaching learning disabled students	24	3.16	13	4.93
Utilizing a local FFA Alumni affiliate	25	3.04	45	1.94
Organizing fund raising activities for the local FFA chapter	26	2.95	34	3.15
Assessing and evaluating student performance	27	2.84	9	5.58
Organizing a local FBMA program	28	2.73	19	4.61
Conducting an adult program	29	2.71	5	6.86
Locating and selecting student references and materials	30	2.61	23	3.94

Table 1 continues

Table 1. Continued

Inservice Needs	Beginning Teachers Rank	Beginning Teachers MWDS[a]	Joint State Staff Rank	Joint State Staff MWDS[a]
Teaching knowledge and skills in marketing agricultural products	31	2.59	29	3.57
Repairing and reconditioning agricultural mechanics tools and equipment	32	2.45	6	6.51
Teaching knowledge and skills in forestry	33	2.37	37	2.76
Teaching about public issues regarding agriculture	34	2.35	24	3.91
Developing performance based assessment instruments	35	2.31	48	1.86
Developing relations with fellow teachers and administrators	36	2.24	15	4.91
Planning banquets	37	2.18	33	3.26
Teaching agribusiness knowledge and skills	38	2.12	46	1.93
Teaching small gas engines	39	2.10	44	1.98
Teaching knowledge and skills in horticulture	40	2.06	38	2.71
Teaching knowledge and skills in agricultural construction	41	1.80	36	2.77
Teaching about and agriculture's relationship with the environment	42	1.78	31	3.45
Teaching knowledge and skills in the plant sciences	43	1.65	41	2.26
Conducting parent/teacher conferences	44	1.65	14	4.92
Using multimedia equipment in teaching	45	1.61	28	3.60
Implementing VIMS in the local program	46	1.38	42	2.26
Planning and conducting student field trips	47	1.12	50	-.01
Developing knowledge and skills in the animal sciences	48	.83	39	2.42
Teaching knowledge and skills in soils and soil management	49	.80	27	3.63
Teaching equine science	50	.38	49	1.23

[a]MWDS = Mean Weighted Discrepancy Score

A majority of the beginning agriculture teachers preferred to receive their inservice education through workshops ranging from two to three hours (76%), at the summer vocational teacher conference (76%), and by participating in district inservice courses (57%) (Table 2). A majority (62%) of the beginning teachers also preferred having the opportunity to receive graduate credit for inservice courses. However, few of the beginning teachers indicated they would choose to receive inservice education through videotape (30%) or interactive television (24%).

Conclusions and/or Recommendations

Twelve of the 50 professional competencies were identified by the beginning teachers as having a greater need for inservice education. Of the 12

Table 2. Beginning Teachers' Preference for Inservice Delivery Methods

Form of Inservice Delivery	n	%
Two to three hour seminar/workshop	28	75.7
Inservice sessions at summer conference	28	75.7
Course for courses	23	62.2
District inservice courses (4 meetings at 4 hours each)	21	56.8
One week short course (during summer)	14	37.8
Weekday meeting (during summer)	12	32.4
Videotapes	11	29.7
Interactive television	9	24.3

professional competencies, five were classified in the category of instruction, five in the category of program planning, development, and evaluation, and two in the category of program administration as defined by Shippy (1981).

The professional competency with the greatest need for inservice education, as perceived by beginning teachers, was in completing reports for local and state administrators which supported the conclusions of previous research (Hillison, 1977; Claycomb & Petty, 1983). Motivating students to learn was identified as the second most needed area of inservice, which supported Veeman's (1984) conclusion of being a frequent problem faced by beginning teachers, regardless of subject matter discipline.

Many teachers of agriculture graduate from teacher preparation programs claiming to lack the necessary technical agriculture knowledge and skills to be successful teachers (Claycomb & Petty, 1983). However, the technical agriculture knowledge and skill competencies were ranked lower in priority for inservice when compared to the professional competencies in the areas of instruction, program planning, development, and evaluation, and program administration. Therefore, it can be concluded that the beginning teachers perceived that technical agriculture competence was not as much a factor in the success of a beginning teacher as were the other professional competencies. This conclusion is supported by Claycomb and Petty's (1983) finding that the need for assistance in human relations and program administration increased and outweighed technical expertise during the first year of teaching.

The four highest rated inservice needs for beginning teachers, as perceived by the Joint State Staff, were included in the 13 highest rated inservice needs as prioritized by the beginning teachers. As with the beginning teachers, the Joint State Staff ranked the technical agriculture knowledge and skill competencies lower in priority when compared to competencies in the areas of instruction, program planning, development and evaluation, and program administration. However, in general, the ranking of the inservice needs as perceived by beginning agriculture teachers did not correspond with the rankings of the inservice needs as perceived by the Joint State Staff.

The beginning teachers preferred to receive inservice through the traditional inservice delivery methods of two-three hour workshops, sessions at the summer vocational teacher conference, and district inservice courses. However, less than one third of the beginning teachers expressed a desire to receive inservice through videotapes or through the use of interactive television. Is it possible that the low acceptance of the use of videotapes and interactive television was due to teachers being unfamiliar with the technology and its capabilities? This issue of using these educational technologies should be further investigated. As the number of teacher educators available to conduct inservice activities become fewer, alternative ways of providing inservice must be explored.

It is recommended that the findings of this study be taken into account as teacher educators in the state of Missouri plan and develop inservice courses for beginning teachers. Inservice should

focus on enhancing instruction, program development and evaluation, and program administration. The specific inservice needs given the highest ranking should be given priority when planning and developing inservice programs for beginning teachers. In addition, the current study should be replicated in other states to determine if the inservice needs of beginning teachers are consistent across states.

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