

ADULT EDUCATION PHILOSOPHIES PRACTICED BY AGRICULTURAL EDUCATION TEACHERS IN PENNSYLVANIA, VIRGINIA, AND WEST VIRGINIA

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Abstract

Zinn's (1990) Philosophy of Adult Education Inventory (PAEI) was used to determine the adult education philosophies practiced by Pennsylvania, West Virginia, and Virginia secondary school agricultural education teachers. The target population of this study included all agricultural education teachers from Pennsylvania, West Virginia, and Virginia who taught during the 1998-99 academic year. Proportional stratified sampling (n = 314) was employed to ensure equal representation from each state identified in the target population. One hundred and eighteen secondary agricultural education teachers responded to the survey (38%). Slightly more than two-thirds of the educators in the tri-state area identified with the progressive philosophy. Large effect sizes were found in the correlations between three pairs of the philosophies. Medium effect size correlations were also found in the correlations between another four pairs of the philosophies. In addition, small effect size correlations were discovered between the humanistic philosophy and state variable as well as progressive philosophy and adult education payments. Over three fourths of the respondents indicated they taught adults. Nearly two-thirds of the respondents reported having receiving formal training in teaching adults and slightly over three fourths of the respondents who indicated they taught adult classes were paid to teach the classes.

Introduction

Over the past 125 years, agricultural educators have been pioneers in the development of adult education. This effort was enhanced with the passage of four major pieces of Federal legislation. The Morrill Act of 1862 established the Land-Grant Colleges. Land-Grant Colleges' emphasis on education in agriculture and the mechanical arts was designed to improve social and economic conditions for the rural population. In 1887, the Hatch Act established the Agricultural Experiment Stations. By making it possible to apply scientific findings to real world agricultural problems, the Hatch Act increased the need for adult education in agriculture. The Smith-Lever Act of 1914, which established the Cooperative Extension Service, and the Smith-Hughes Act of 1917, which established vocational education in

agriculture in the public schools, provided a specific response to the need for adult education in agriculture (Bender, McCormick, Woodin, Cunningham, & Wolf, 1972).

Although agricultural educators were pioneers in the development of adult education programs, the emphasis on adult education in agriculture has declined in recent years. The number of secondary agricultural education programs offering education opportunities for their adult constituents has declined. In 1989, Birkenholz and Maricle (1991) found that while there were 5,852 secondary agricultural education programs in the United States, there were only 1,610 adult agricultural education programs. In 2000, Burdette (unpublished manuscript) found less than one fourth of the agricultural educators in West Virginia (22.7%) were

conducting organized educational activities for adults outside of the normal school day.

In 1991, Chizari and Taylor wrote that adult agricultural education programs were important because of rapid advances in technology, innovative marketing, new farm management techniques, new agricultural laws, and regulations. Harbstreet (as cited in Birkenholz & Maricle, 1991) stated that adult agricultural education programs used to focus on improving the efficiency in production agriculture and managerial skills, but now the focus has shifted to problems of agricultural consumers, homeowners, gardeners, and concerned citizens. Nur, Birkenholz, and Stewart (1989) agreed that a shift in the target audience and the knowledge base for adult education programs has occurred. As we move into the 21st century, the agriculture industry is still concerned with technological advances, new agricultural laws, innovative marketing strategies, and new groups of potential clientele. Each of these topics represents an area of need that could be served by adult agricultural education programs.

The education of adults (andragogy) is different from the education of youth (pedagogy) (Knowles, 1962; 1970; Beder, 1989). The differences can be summarized in five basic assumptions (Merriam, 2001). One, the adult learner has an independent self-concept and can direct his or her learning. Knowles (1975) noted that self-directed learners learn more things and learn better than passive learners. Bergevin (1967) stated that problem-centered learning was basic to adult education. Two, the adult learner brings a variety of life experiences that provide a rich resource for learning (Apps, 1981; Brookfield, 1989). Knowles (1975) suggested, "We must learn from everything we do; we must exploit every experience as a 'learning experience' (p. 16)." Three, learning needs are closely related to social needs. Four, the adult learner is problem-centered and interested in immediate application of knowledge (Knowles, 1984). Five, the adult learner is motivated by internal rather than external factors (Knowles, 1984).

While the five assumptions are presented as either/or statements, in life this is not always the situation. Not all adult learners

meet the basic assumptions and not all youth are the antithesis of the adult learner. Knowles (as cited in Merriam, 2001) spoke of learning as not andragogy verses pedagogy but as a continuum ranging from teacher directed to student directed learning.

As the current role of agricultural educators in delivering adult education is examined, the personal adult educational philosophies of the agricultural educators should also be examined. Hiemstra (1991) suggested that change is achieved through knowledge of how a personal philosophy affects the way an educator works with people. He went on to explain that understanding one's philosophy promotes understanding of human relationships, sensitizes one to various needs associated with positive human interactions, provides a framework for distinguishing, separating, and understanding personal values, and promotes flexibility and consistency in working with adult learners.

By studying the philosophies of adult agricultural educators, recommendations can be offered to encourage more involvement by agricultural educators in the delivery of educational opportunities to adults. Zinn (1990) wrote, "When the adult educator engages in the practice of education, certain beliefs about life in general are applied to the practice. These beliefs constitute the basis for a philosophy of education" (p. 40). The entire educational process: the selection of content, selection of teaching methods, development of instructional objectives, and interaction with the learners is influenced by the educators' beliefs.

The actions of agricultural educators as they relate to adult education can be changed by changing their beliefs. Beliefs change to accommodate new needs and experiences (Zinn, 1990). By understanding the philosophies of agricultural educators, it is possible to change agricultural educators response to the needs of the adult populations by demonstrating the needs of the adult population and providing concrete experiences on which teachers can build a new philosophy of adult education. Hiemstra (1991) states that having a philosophy separates professional educators from paraprofessionals in that professionals

are aware of what they are doing and why they are doing it.

Review of Literature

The review of literature started with a description of Zinn's (1983) Philosophy of Adult Education Inventory (PAEI). The PAEI was designed to determine the philosophy of adult educators. The inventory consisted of 75 statements rated on a seven-point Likert-type scale with 1 = strongly disagree, 4 = neutral, and 7 = strongly agree. Total scores can range from 15 to 105 for each of the five philosophical orientations. These scores signify the individuals' views toward the philosophies of adult education. The following provides an in-depth description of these philosophical ideologies.

Liberal

The liberal adult education philosophy stresses the development of intellectual powers. Liberals always seek knowledge. They work to transmit knowledge and clearly direct learning. The educator is the "expert." He/she directs the learning process with complete authority. Learning methods used include lecture, study groups, and discussion. Socrates, Plato, and Piaget were practitioners of the liberal philosophy. (Note: Liberal adult education does not refer to liberal political views; it is related to Liberal Arts.).

Behaviorist

The behaviorist adult education philosophy emphasizes the importance of the environment in shaping change. The traits of the behaviorist teacher are close to those of the liberal. The behaviorist "manages" the learning process and directs learning. Behaviorist concepts include mastery learning and standards-based education. Some methods of teaching that behaviorist educators use include programmed instruction, contract learning, and computer guided instruction. Vocational training and teacher certifications are both behaviorist practices. Skinner, Thorndike, and Steinberg were believers in the behaviorist philosophical tenet.

Progressive

The progressive philosophy of adult education stresses an experiential, problem-solving approach to learning. Learners of this philosophy need problem solving skills and practical knowledge. Teaching methods used in this philosophy include problem solving, the scientific method, and cooperative learning. The educator is an organizer who guides learning instead of directing learning and evaluates the learning process. Progressive proponents include Spencer, Dewey, and Lindeman.

Humanistic

The humanistic adult education philosophy seeks to facilitate personal growth and development. Humanists are highly motivated and self-directed learners; responsibility to learn is assumed by the learner. The humanist educator facilitates learning but does not direct learning. The educator and learner are "partners." Concepts that define the humanistic philosophy include experiential learning, individuality, self-directed, and self-actualization. Humanistic teaching methods contain group discussion, team teaching, individualized learning, and the discovery method. Rogers, Maslow, Knowles, and McKenzie are facilitators of the humanistic philosophy.

Radical

The radical adult education philosophy or reconstructionist philosophy promotes social, political, and economic change through education. The educator and learner are equal partners in the learning process. The educator is the coordinator of the class and makes suggestions but does not direct the learning process. This philosophy embraces concepts such as noncompulsory learning and deschooling. Exposure to the media and people in real life situations are considered effective teaching methods. Holt, Freire, and Illich are proponents of the radical adult education philosophy.

Several research studies were found that used Zinn's Inventory (1990) to establish the philosophy of adult educators. Rachal, DeCoux, Leonard, and Pierce (1993) administered the Principals of Adult Learning Scale (PALS) and the Philosophy

of Adult Education Inventory (PAEI) instruments to 111 graduate adult education students. The overall group was predominately progressive on the PAEI. An analysis of variance was used to compare demographic variables across all scores on the two instruments. On the progressive scale, females scored significantly higher than males. Females also scored higher on the humanistic scale than males. A significant difference was also found between the under 30 and over 40 age groups on the humanistic scale.

Rachal et al., (1993) also found positive correlations between instrument scores and the demographic variables of age and gender. A high magnitude correlation was found between the liberal and behaviorist orientations. Other significant relationships were discovered between progressive-humanist and radical-humanist orientations.

In a study of students enrolled in the researcher's classes, Wingenbach (1996) found significant differences between gender and the behaviorist and radical orientations. All females were found to have higher mean scores than did males in the radical philosophical orientation. In the behaviorist orientation, female graduates had higher mean scores than did male graduates. In the undergraduate group, males had higher mean scores. The students did not differ statistically in their mean scores for the behaviorist, humanistic, or radical orientations.

These findings differ from the findings of McKenzie (1985). In his study, McKenzie (1985) found significant differences in all five philosophical orientations while comparing business trainers, religious educators, and adult education graduate students.

Significant differences between the groups in the liberal orientation may represent the findings of Berger and Luckmann (1966). That is, when individuals enter an institution, they begin to express the views reflected in that institution; they begin to speak a common language.

Youth and adults differ greatly in their preferred learning styles and educational environments. If agricultural education teachers acknowledge these basic

differences, then the teaching methods, procedures, activities, learning environments, and evaluations must also differ for adult audiences. By understanding the philosophy of adult educators, one can determine the degree to which educators employ different methods, procedures, and activities to educate their adult constituents.

Purpose and Objectives

The purpose of this study was to determine the adult education philosophies as practiced by Pennsylvania, West Virginia, and Virginia secondary school agricultural education teachers. The objectives were to:

1. Determine the demographics of Pennsylvania, West Virginia, and Virginia agricultural education teachers who may have taught an adult technology class in agriculture during 1998-99.
2. Assess Pennsylvania, West Virginia, and Virginia agricultural education teachers' philosophies of adult education using the Philosophy of Adult Education Inventory.
3. Determine if significant relationships exist between agricultural education teachers' philosophies and selected demographic variables.

Limitations of the Study

The study was limited to secondary school agricultural education teachers ($N=657$) in Pennsylvania, West Virginia, and Virginia who may have taught adults in their local communities during the 1998-99 academic year.

Methods and Procedures

A descriptive research survey methodology and a correlational design were used in this study. The primary advantage in using this research methodology was the accumulation of large amounts of data in a limited timeframe. The correlational design allows for discovery, clarification, and/or explanation of

relationships between and among the research variables.

Population and Sample

The target population of this study included all agricultural education teachers from Pennsylvania ($N=259$), West Virginia ($N=95$), and Virginia ($N=303$) who taught classes during the 1998-99 academic year and who were listed in their respective state's Agricultural Educators Directory for the 1998-99 academic year. The researcher obtained original copies (paper and electronic) of these directories from the State Supervisors for Agricultural Education. The State Supervisors divided the groups into adult educators and non-adult educators. The population of agricultural education teachers was determined to be 657. Proportional stratified sampling was employed to ensure equal representation from each state in the target population. A sample size of 314 was needed to represent this population (Krejcie & Morgan, 1970).

Instrumentation

The Philosophy of Adult Education Inventory (PAEI) (Zinn, 1994) was used to obtain information for this study. The PAEI was developed by Zinn (1983) to help the adult educator determine his or her philosophy of education and compare it to other educators' philosophies.

The educator's highest score is the one that most closely describes his/her philosophy. The lowest score is the philosophy least like the educator's philosophy. A score of 95 to 105 indicates that the educator strongly agrees with a philosophy. A score of 15-25 indicates that the educator strongly disagrees with a philosophy. It is not uncommon, however, for an educator to have two philosophies that have high scores. This occurs because of some overlap in the philosophies. Educators who have other combinations of high scores or have three or more close scores should review their beliefs and look for contradictions (Zinn, 1983). Some common philosophy combinations are

liberal and behaviorist, progressive and humanistic, progressive and radical, and humanistic and radical (Zinn, 1983).

In previously published studies by Zinn (1990), the PAEI had been determined to be a reliable and valid instrument for measuring adult education philosophies with reported Cronbach's alpha levels at .75. The PAEI was designed to be administered, scored, and interpreted by the respondent (Zinn, 1983). The instructions sent with Zinn's inventory were the original instructions Zinn developed to accompany the PAEI. An additional instrument, developed by the researcher, was sent to assess respondents' educational degree attained, years of teaching experience, geographic location, age, and gender.

Data Collection Procedure

Data collection procedures were developed based upon practices recommended by Dillman (1978). The data collection efforts began in the spring of 1999. For the study, PAEI instruments, demographic questionnaires, cover letters, and self-addressed, stamped return envelopes were mailed to the samples in Pennsylvania, West Virginia, and Virginia. Two weeks after the initial mailing, follow-up postcards were sent out to all non-respondents. Four weeks after the first mailing, a second postcard reminder was sent to all non-respondents.

Five weeks after the initial mailing, the researcher selected 10% of the non-respondents and sent them a new PAEI, cover letter, and demographic sheet. The mean responses of these subjects were statistically compared to the respondents to determine if significant differences existed (Ary, Jacobs, & Razavieh, 1996). No significant differences were found.

Analysis of Data

Data collected were analyzed using SPSS. Descriptive statistics (frequencies, means, and standard deviations) as well as correlational and multivariate analyses were used to describe and analyze the research data.

Results/Findings

Adult Educators

The sample size for the study was 314 teachers comprised of 93 teachers from the adult educator group and 221 teachers from the non-adult educator group. A total of 118 participants returned surveys with usable data for the study resulting in a response rate of 38%. When the response rate was examined by dividing the respondents into adult educators and non-adult educators, there was a significant difference in the response rates. For example, 75 of the 93 adult educators returned their survey for a response rate of 81%. Of the non-adult educators, only 43 of the 221 educators returned their surveys resulting in a response rate of 19%.

Non-Response Error

An Analysis of Variance (ANOVA) was used to determine if differences existed between respondents and non-respondents. Non-respondents were surveyed using the double-dipped sampling method. No significant differences were found between

the two groups on the rating of the five philosophical tenets.

Demographics of Respondents

Each respondent provided basic demographic information in addition to completing the PAEI instrument. Respondents were asked questions including state, age, gender, degree, years of teaching secondary school, number of years teaching adults, whether the educator received formal education for teaching adults, and whether the educator received monetary compensation.

The average age of the respondents was 44 years ranging from a low of 22 years to a high of 63 years. The minimum number of years taught by the respondents was less than one year and the maximum was 35 years. The mean number of years taught by the respondents was 19 years. The minimum number of years for teaching adults was one year while the maximum number of years teaching adults was 34 years. The mean number of years that educators had taught adults was 14 years.

Table 1
 Descriptive Statistics for Demographic Data

Variable	Non-Adult Educator		Adult Educator		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Respondents	43	39.4%	75	63.6%	118	100.0%
Teach Adults (<i>n</i> = 114)						
Yes	39	90.7%	49	69.0%	88	77.2%
No	4	9.3%	22	31.0%	26	22.8%
State (<i>n</i> = 118)						
Pennsylvania	13	30.2%	36	48.0%	49	41.5%
Virginia	21	48.8%	24	32.0%	45	38.1%
West Virginia	9	20.9%	15	20.0%	24	20.3%
Gender (<i>n</i> = 107)						
Male	37	86.0%	62	82.7%	99	83.9%
Female	6	14.0%	13	17.3%	19	16.1%
Degree (<i>n</i> = 118)						
Bachelor's	18	41.9%	34	48.6%	52	46.0%
Master's	25	58.1%	35	50.0%	60	53.1%
Ph.D.	0	0.0%	1	1.4%	1	0.9%
Adult Education Preparation (<i>n</i> = 110)						
Yes	25	61.0%	37	53.6%	62	56.4%
No	16	39.0%	32	46.4%	48	43.6%
Adult Education Payments (<i>n</i> = 107)						
Yes	34	87.2%	33	68.8%	67	77.0%
No	5	12.8%	15	31.3%	20	23.0%

Respondents included 49 educators from Pennsylvania (41.5%), 45 educators from Virginia (38.1%), and 24 educators from West Virginia (20.3%). Ninety-nine respondents were male (83.9%). Sixty-one respondents (54.0%) had an advanced college degree (master's degree or Ph.D.) while 52 respondents (46.0%) had a bachelor's degree. Eighty-eight respondents indicated they taught adults (77.2%). Sixty-two respondents (56.4%) reported having receiving formal training in teaching adults and 67 respondents who indicated they taught adult classes (77.0%) were paid to teach the classes.

Philosophy of Adult Education

Eighty educators in the tri-state area (67.8%) identified with the progressive

philosophy. None of the respondents identified with the liberal philosophy. Other philosophies represented by the respondents included 25 behaviorists (21.2%), nine humanists (7.6%), and four radicals (3.4%). The progressive philosophy was the most frequently occurring philosophy in each state with Pennsylvania educators having the highest percentage (71.4%), followed by West Virginia (68.9%), and Virginia (58.3%). The second most frequently occurring philosophy in each of the three states was the behaviorist with Virginia having the highest percentage (29.2%), followed by Pennsylvania (20.4%) and West Virginia (17.8%). Combined, the progressive and behaviorist philosophies accounted for 89.0% of the respondents (see Table 2).

Table 2
Adult Philosophy of Agricultural Educators by State

	Pennsylvania		West Virginia		Virginia		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Liberal	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Behaviorist	10	20.4%	8	17.8%	7	29.2%	25	21.2%
Progressive	35	71.4%	31	68.9%	14	58.3%	80	67.8%
Humanist	2	4.1%	4	8.9%	3	12.5%	9	7.6%
Radical	2	4.1%	2	4.4%	0	0.0%	4	3.4%
Total	49	100.0%	45	100.0%	24	100.0%	118	100.0%

Pearson's correlation coefficients were calculated between the five philosophical tenets. Using Cohen's convention (1988) for describing the magnitude of a relationship, researchers found a large effect size between the liberal and behaviorist philosophies ($r = .81$), the behaviorist and progressive philosophies ($r = .72$), the liberal and progressive philosophies ($r = .59$) as well as the humanistic and progressive philosophies ($r = .55$) (see Table 3). A medium effect size was discovered between the humanistic and radical

philosophies ($r = .48$), the humanistic and behaviorist philosophies ($r = .42$), the liberal and humanistic philosophies ($r = .38$) and the behaviorist and the radical philosophies ($r = .30$) (see Table 3).

Correlations between the philosophies and the demographic variables were also examined. Small effect sizes (Cohen, 1988) were discovered between the state variable and the humanistic philosophy ($r_{pb} = -.27$), as well as, the adult education payment variable and the progressive philosophy ($r_{pb} = .19$).

Table 3
Correlation Between Philosophical Categories and Demographic Variables

	Liberal	Behaviorist	Progressive	Humanist	Radical
Liberal		.81**	.59**	.38**	.29**
Behaviorist			.72**	.42**	.30**
Progressive				.55**	.26**
Humanist					.48**
Radical					
Age	.11	.05	.01	.00	.11
Years	.17	.17	.06	-.03	.04
Adult Years	.15	.09	-.04	-.01	.13
State	.00	-.02	.09	-.27**	-.08
Gender	.06	-.05	.13	-.02	.10
Degree	.07	.10	.10	.01	.07
AE Preparation	.07	.14	.05	.17	.13
AE Payment	.10	.09	.19*	.07	-.04

* $p < .05$. ** $p < .01$.

Discriminant Analysis Between Philosophies

In their research, Rachal et. al., (1993) found significant differences between the philosophical groups and the demographic variables gender and age. To determine if differences existed between educators in the five philosophical groups of this study and the demographic variables, a stepwise discriminant analysis was conducted. The following null hypothesis was tested: There is no difference between the five group centroids on the discriminant score.

Three interval variables (age, years taught, and years teaching adults), as well as nine dummy coded nominal variables (adult education payments, male, female, bachelor's degree, master's degree, doctoral degree, Pennsylvania, Virginia, and West Virginia) were included in the analysis. At each step of the analysis, the variable that maximizes the overall Wilks' lambda was entered. None of the variables qualified for the stepwise discriminant analysis statistical procedure. There was no difference between the five group centroids of the five philosophical orientations.

Summary

One hundred and eighteen secondary agricultural education teachers in Pennsylvania, West Virginia, and Virginia responded to the survey with useable data from a 38% response rate. The average respondent was 44 years of age, had 18 years teaching experience, and had taught adult education classes for 14 years. Approximately two-thirds of the respondents taught adults. The group was predominately male with more than half having an advanced degree. Eighty educators in the tri-state area (67.8%) identified with the progressive philosophy. Large effect sizes were found in the correlations between three pairs of the philosophies. Medium effect size correlations were also found in the correlations between another four pairs of the philosophies. In addition, small effect size correlations were discovered between the humanistic philosophy and state variable, as well as progressive philosophy and adult education payments.

Conclusions and Implications

Based upon the review of literature and the research findings, the following conclusions were reached. The conclusions were limited to the respondents from Pennsylvania, Virginia, and West Virginia who participated in the study.

1. A majority of adult agricultural educators guide the learning process of their adult students. Their goal is to give the learner practical knowledge and problem solving skills.

Slightly more than two-thirds of the educators in the tri-state identified with the progressive philosophy. Keep in mind that teaching methods used in this philosophy include problem solving, the scientific method, and cooperative learning. Agricultural educators have long been advocates of the problem solving approach to teaching. Over the past 100 years, Dewey's Steps in Reflective Thinking, also known as The Chain of Reasoning, The Method of Science, and The Scientific Method, have been recommended by agricultural educators as the problem solving approach to teaching (Crunkilton & Krebs, 1982; Hammonds, 1950; Lancelot, 1944; Newcomb, McCracken, & Warmbrod, 1993; Stewart, 1950).

Has the emphasis on the use of problem solving in teaching high school and adult agricultural education students influenced the philosophical development of agricultural educators? While the data from the study did not lend itself to answering this question, it presents an interesting topic for additional research.

2. Many agricultural educators were not prepared to teach an adult component to their agricultural education program.

Nearly half of the participants in the study indicated that they had not received formal education courses in teaching adult classes. Without adequate preparation in the andragogy, the opportunities for success

with an adult education program will be sacrificed.

3. Many agricultural educators were committed to conducting an adult component to their agricultural education program, even when they are not compensated for providing the service.

Nearly one-fourth of the study participants who conducted adult education classes did so without being paid for the services. This demonstrates a commitment on the part of the educators to their program and the agriculture industry in their community.

4. Agricultural educators who participated in the study did not have a clearly defined philosophy of adult education.

Positive correlations with large effect sizes (Cohen, 1988) were found between liberal and behaviorist, liberal and progressive, behaviorists and progressive, and progressive and humanists philosophical categories. Positive correlations with medium effect sizes were found between liberal and humanistic, liberal and behaviorist, radical and behaviorist, and radical and humanistic philosophical categories. One might expect to find some negative correlations among the five scales of the PAEI, on the assumption that some of the scales might be mutually exclusive (Rachal et al., 1993). Since negative correlations were not found, one could question if the educators had clearly defined philosophies of adult education.

5. The adult education philosophy of the study participants could not be predicted using demographic characteristics.

Philosophies change to accommodate new needs and experiences (Zinn, 1990). While demographic characteristics give some insight into an individual's experiences, they are not the best indicators of that experience. Therefore, it is not unreasonable to assume that demographic characteristics could not be used to predict an individual's educational philosophy.

Recommendations

1. Additional research should be conducted on identifying philosophies of adult agricultural educators.

The positive relationships between the philosophical orientations raise concerns as to the accuracy of the PAEI in determining philosophies of the target population. Zinn (1990) suggests that one should work on clarifying your beliefs and look for contradictions among them if you score fairly equal on three or more of the philosophies. An alternative approach to determining and/or clarifying one's philosophy was suggested by Mulcrone's (1993). A qualitative research study could be undertaken to answer the following questions:

- What are the purposes (goals and objectives) of adult education?
- What should be the content or subject matter of adult education?
- Should the content include values?
- Who should learn and who should teach?
- Where (in what setting) should adult education be taught?
- How should adult education be funded?
- Should there be limits on services?

2. All pre-service agricultural education programs should include an adult education component.

It is commonly accepted that adult students require different educational techniques than for teaching youth. If state supervisors and local administrators expect agricultural education programs to include an adult education component, preservice teachers must be adequately prepared in the principles of andragogy. If preservice teachers are not adequately prepared, two situations could occur. The teacher may elect to ignore the adult education component of the agricultural education program or the teacher will struggle and possibly fail at delivering adult education.

Either way the program and the community lose.

3. Agricultural educators should be compensated for their work with the adult populations in their communities.

Scarborough, Boone, Lawrence, Gartin, Odell and Woloshuk (2001) found over 60% of a group of secondary agricultural educators in Ohio, Kentucky, and West Virginia were engaged in part-time employment activities. While the study did not address the reasons agricultural educators were involved in part-time employment, one could assume that at least a portion of the educators were interested in the additional income. By ensuring that all agricultural educators were adequately compensated for their adult work, the need for additional income could be reduced and the entire agriculture program strengthened

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