

## **Learning Styles, Teaching Styles and Personality Styles of Preservice Teachers of Agricultural Education**

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Each teacher is unique in many ways. Teachers vary from one another in such characteristics as learning style, teaching style and personality style. Research has been conducted in several teacher education disciplines with regard to the selected teacher characteristics of learning style (Witkin, 1973; Gregorc, 1979; Jensen, 1969; Jacobs, 1990; MacNeil, 1980; Avery, 1985; Jeskey, 1985; Zippert, 1985; Frainer, 1986; Young, 1986), teaching style (Dunn and Dunn, 1979; Witkin, 1973; Gregorc, 1979; Avery, 1985; Koppleman, 1980), and personality style (Lawrence, 1984; Sugarman, 1985; Meyers and Myers, 1980; Hoffman and Betkouski, 1981; Carlyn, 1976; Duch, 1982; DeNovellis and Lawrence, 1983). Despite the amount of related research regarding learning styles, teaching styles, and personality styles, agricultural education professionals may be unable to fully utilize the results because agricultural education teachers were not included in the sample of the previous research. Thus, within agricultural education, a problem exists in that there is a lack of data which identifies the learning style, teaching style, and personality style that teachers in the profession possess.

The agricultural teacher education profession needs to be examining if there is a difference among teachers of agriculture on the selected teacher characteristics in an effort to prepare teachers of agriculture who will be able to teach to an increasingly diverse student population. The important questions the agricultural teacher education profession needs to address are: Is there a difference in the preferred teaching styles of teachers of agriculture? Is there a difference in the preferred teaching styles of teachers of agriculture? Does a difference exist in the preferred learning styles among those who select teaching agriculture as a career and do teachers of agricultural education differ in personality styles?

Consequently, due to the lack of research with regard to these selected teacher characteristics, agricultural teacher educators do not possess all the necessary information needed to more effectively train and supervise teachers of agriculture. A better understanding of agriculture preservice teachers could be obtained if teacher educators in agricultural education possessed the knowledge with regard to the preservice teacher characteristics. Teacher educators would be in a more desirable situation to help individual preservice teachers understand themselves and improve their teaching styles to meet the individual learning styles of future students.

Learning style describes the process that learners use to sort and process information. Learning style is an important factor in several areas including students' academic achievement, how students learn and teachers teach, and student-teacher interaction (Witkin, 1973). Several studies have measured and explained learning styles (Witkin, 1973, Gregorc, 1979; Jensen, 1969; Witkin, 1973; Jacobs, 1990; MacNeil, 1980; Avery, 1985; Jeskey, 1985; Zippert, 1985; Frainer, 1986; Young, 1986). The conclusion drawn from the previous research is that not all students learn the same. Because not all students learn the same it therefore becomes imperative that teachers recognize the learning style differences and teach in a manner in which all learning styles are incorporated. But, are teachers able to recognize their own learning style differences?

Better yet, Could it be that a teacher's teaching style is consistent with their learning style? "Teachers teach the way they learned" (Dunn and Dunn, 1979, p. 241). Dunn and Dunn's conclusion is supported by other researchers (Witkin, 1973, Gregorc, 1979; Avery, 1985). Yet, Koppleman (1980) suggested that insufficient investigations have been conducted on the influence of a persons learning style on their teaching style.

It has also been suggested that individual differences in personalities, as measured by the Myers-Briggs Type Indicator (MBTI), can be used in learning style assessment (Lawrence, 1984; Sugarman, 1985) and teaching style prediction (Myers and Myers, 1980; Hoffman and Beckouski, 1981). More important, it has been suggested that once individuals know and understand their personality characteristics, it thus becomes easier to understand and teach those who are different than themselves (Carlyn, 1976; Duch, 1982; DeNovellis and Lawrence, 1983).

### **Purpose and Objectives**

The purpose of this study was to determine the learning style, teaching style, and personality style of preservice teachers in a methods of teaching agriculture course. To guide this study, the following research questions were investigated:

What was the preferred learning style of preservice teachers in agricultural education as measured by the Group Embedded Figures Test?

What was the preferred teaching style of preservice teachers in agricultural education as measured by the VanTilburg/Heimlich Teaching Style Preference Inventory?

What was the preferred personality style of preservice teachers in agricultural education as measured by the Myers-Briggs Type Indicator?

### **Methodology**

#### **Population and Sample**

The population for this descriptive study was preservice teachers majoring in agricultural education at The Ohio State University. The sample was preservice teachers enrolled in a methods of teaching agriculture course during the Spring and Autumn Quarters of 1990. The sample (n=25) included seven female and 18 male students.

#### **Instrumentation**

The Group Embedded Figures Test (GEFT) (Oltman, Raskin, and Witkin, 1971) was administered to determine the preferred learning style of the subjects as either field-dependent or field-independent, two of the most widely studied learning styles. Subjects who score above the group mean are considered to be independent learners. In contrast, subjects who score below the group mean are considered to be dependent learners.

Research (Witkin, 1973) has shown that a person whose mode of perception is strongly dominated by the surrounding field is said to be learning towards a field-dependent learning style. A person who perceives items as more or less separate from the surrounding field is leaning more toward a field-independent learning style.

Teachers with a field-dependent learning style are socially orientated with their students by encouraging them to work cooperatively as a unit. Field-dependent teachers

are very learner-centered, always find something positive to say about each student and generally avoid the use of negative comments on evaluations. Lessons of field-dependent teachers are extremely clear with logical steps toward the objective. Field-dependent teachers perceive globally, therefore finding it more difficult to solve problems and teach using the problem-solving approach.

A teacher with a field-independent learning style prefers impersonal teaching situations. Field-independent teachers make it clear that they are the authority and are responsible to "guiding", not necessarily "teaching" the students. Field-independent teachers are subject-centered focusing on instructional objectives and encouraging independent achievement. Furthermore, field-independent teachers emphasize the importance of individual effort and encourage learning through trial and error. Field-independent teachers perceive analytically, therefore finding it easier to promote problem-solving, critical thinking, and the inquiry approach to learning.

The VanTilburg/Heimlich Teaching Style Preference (Heimlich, 1990) was used to ascertain the subjects' preferred teaching style. This instrument defines two domains, sensitivity and inclusion. The sensitivity domain is based on the ability of the teacher to 'sense' the shared characteristics of the group of learners. Inclusion domain is based on the teacher's willingness and ability to utilize techniques to enhance the learning experience based on the groups characteristics.

A teacher can be categorized into one of four teaching style dimensions based on their scores on the sensitivity and inclusion domain scales. The greater the score in either the sensitivity or inclusion domain, the more 'sensitive' or 'inclusive' the teacher is with his or her learners.

The low inclusion and low sensitivity quadrant is labeled "expert." Teachers with an "expert" preferred style are subject oriented and seek efficiency in information sharing mainly through lecture. A teacher who scores in the low inclusion and high sensitivity quadrant is labeled the "provider." The "provider" teachers are learner-centered and desire effectiveness in teaching. Methods inherent to their style of teaching include group discussion, demonstration and guided activities.

The high inclusions and low sensitivity quadrant is labeled "facilitator." The "facilitator" teachers are teacher-centered and the methods of instruction depends on subject content ;more than on the learners. The final dimension is the high inclusion and high sensitivity quadrant and teachers with this style are labeled "enabler." The "enabler" style of teaching is very learner-centered in that the learners define both the actgivity and the process in the learning environment.

The Myers-Briggs Type Indicator (MBTI) Form G (Myers, 1977),. which contains 116 multiple choice questions, was used to assess the personality type of the subjects. The MBTI is primarily concerned with the valuable differences in people that result from where people like to focus their attention, the way they like to receive information, make decisions, and the lifestyle adopted.

The MBTI reports an individual's preferences on four scales. Each scale represents two opposite preferences with a total of eight possible preferences. The four scales are the Extraversion-Introversion Scale (EI), the Sensing-Intuition Scale (SN), the Thinking-Feeling Scale (TF), and the Judgment-Perception Scale (JP). The EI scale describes two opposite preferences for where an individual likes to focus their attention on the outer or inner world. The SN scale describes opposite ways that an individual would perceive or acquire information -- how does an individual go about finding out about things; do they use their senses or do they rely on intuition?

Once an individual has acquired information through the SN function, the individual must do something with that information. Information is used to reach conclusions, make decisions, or form opinions. The TF scale describes opposite ways of making decisions or judgements about something either through thinking or feeling. The JP scale describes the lifestyle an individual adopts in dealing with the outer world or how an individual orients himself/herself in relation to the outer world. An individual takes primarily a judging attitude (TF) or a perceptive attitude (SN) toward the outer world.

The GEFT and MBTI are considered standardized instruments and have been tested for validity and reliability by the respective authors. The results of the validity and reliability testing for both the GEFT and MBTI have been acceptable by researchers throughout the world. The VanTilburg/Heimlich Teaching Style Preference, although not considered a standardized instrument, has been tested for reliability and validity by the authors of the instrument and has been used extensively yielding valid and reliable results.

### Data Collection and Analysis

All instruments were administered during the Spring and Autumn Quarters of 1990. The instruments were administered by one of the researchers during class sessions. All instruments were hand scored by one of the researchers and the aggregate data were analyzed by computer.

### **Results and Conclusions**

The results indicated that 11 (44%) of the subjects were field dependent learners and 14 (56%) were independent learners (Table 1). The males were split evenly among field-dependence/independence, while two (29%) of the females were field dependent and five (71%) were field independent. The mean score for the variable learning style was 11.4 which approximates the national norm. In addition, the range of scores was from the minimum possible score to the maximum possible score. From the data collected, one may immediately conclude that preservice teachers do differ in their preferred learning styles. The data further indicates that in this sample, female subjects tended to be more independent than male subjects. The related literature would suggest the opposite to be the case. Furthermore, with the range of scores found within the sample, the teacher must ensure that the teaching behaviors exhibited vary such that all learners and learning styles are included in the lesson.

**Table 1. Preferred Learning Styles of Preservice Teachers (n=25)**

Learning styles	<u>Males</u>		<u>Females</u>		<u>All cases</u>	
	f	%	f	%	F	%
Field-dependence	9	50.0	2	28.57	11	44.0
Field-independence	9	50.0	5	71.43	14	56.0
Total	18	100	7	100	25	100

The teaching style data (Table 2) concluded that for the most part, the subjects preferred a learner-centered approach to teaching. The results indicated that one (4%) of the subjects preferred the "expert" style of teaching, five (20%) preferred the "provider" style, five (20%) preferred the "facilitator" style, and 14 (56%) preferred the "enabler" teaching style. In analyzing the data, male subjects indicated that one (5.6%) preferred the "expert" style, four (22.2%) preferred the "provider" style, four (22.2%) preferred the "facilitator" style, and nine (50%) preferred the "enabler" style of teaching.

**Table 2. Teaching Style Dimensions of Preservice Teachers (n=25)**

Teaching style dimensions	Males		Females		All cases	
	f	%	f	%	f	%
Expert	1	5.6	0	0.0	1	4.0
Provider	4	22.2	1	14.3	5	20.0
Facilitator	4	22.2	1	14.3	5	20.0
Enabler	9	50.0	5	71.4	14	56.0
Total	18	100	7	100	25	100

Female subjects indicated that none preferred the "expert" style, one each (14.3%) preferred the "provider" and "facilitator" style of teaching, and five (71.4%) preferred the "enabler" teaching style. The results indicate that a majority of the subjects preferred the "enabler" style of teaching. The subjects were very learner-centered and involved the learners in defining both the activity and process in the learning environment.

One may conclude that even though the majority of subjects in the sample were independent learners, independent learners' teaching characteristic of being subject-centered was not overwhelming. Why not? Why did the students, specifically the independent learners, place a high value on learner-centeredness?

The MBTI results (Table 3) indicated that the majority of the subjects were either ESFJ, ESTJ, or ISTJ. The gender analysis indicated that the majority of the females were either ESFJ or ISTP and the majority of the males were either ESTJ, ESFJ, or ISTJ. In analyzing the Extraversion-Introversion (EI) dimension, 15 (60%) were E and 10 (40%) were I. On the Sensing-Intuition (SN) dimension, 19 (76%) were S and 6 (24%) were I. Analyzing the Thinking-Feeling (TF) dimension, 14 (56%) were T and 11 (44%) were F. On the final dimension, Judgment-Perception (JP), 15 (60%) were J and 10 (40%) were P.

**Table 3. Personality Types on the Myers-Briggs Type Indicator (n=25)**

Personality type	Male		Female		All cases	
	f	%	f	%	f	%
Extraversion	11	61.1	4	57.0	15	60.0
Introversion	7	38.9	3	43.0	10	40.0
Sensing	14	77.8	5	71.4	19	76.0
Intuition	4	22.2	2	28.6	6	24.0
Thinking	11	61.1	3	43.0	14	56.0
Feeling	7	38.9	4	57.0	11	44.0
Judgment	11	61.1	4	57.0	15	60.0
Perception	7	38.9	3	43.0	10	40.0

Just as there were learning style differences found within the sample, many personality types were also identified. In the Extraversion-Introversion (EI) dimension, 40% of the subjects were I, while 56% preferred the independent learning style, based on their GEFT scores. Being intrinsic is one of the characteristics of the independent learner, but it was not supported by the personality type data. However, the EI dimension was consistent with the teaching style preference data. With 60% of the subjects being E, One

would expect the teaching style data to indicate an inclination towards student-centered teaching. On the Thinking-Feeling (TF) dimension, 56% were T which is consistent with the 56% independent learners on the GEFT. One of the characteristics of the independent learner is their ability to be "thinkers" rather than "feelers."

### Implications

The implications for the profession are far reaching, yet perplexing. The data in this study suggested that agricultural education preservice students differ in learning styles, personality styles, and in their preferred way of teaching. What are agricultural teacher educators doing in preservice programs to be more inclusive of the various learners? If we agree that "teachers teach how they learned," what does it say about teacher educators? How are preservice teachers learning? More research should be conducted to possess a greater knowledge about preservice agriculture teachers and teacher educators in agriculture.

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