

Personality Type Differences of Students and Faculty and Their Effect on Student Achievement

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There is an increasing interest among agricultural educators to find ways to improve instruction and learning. Within the last 10 years considerable attention has been given to the effects of personality type on teaching and learning. Nearly 700 studies have been completed, but few have involved students of agriculture. Lawrence (1982) has stated that one of the greatest problems of American education today is the failure to recognize the unique learning needs of differing personality types.

Agriculture teachers at both secondary and college levels have recognized that not all students learn the same way and may differ from their teachers. Roberts and Lee (1977) confirmed the notion that personality types of agriculture college students were quite different from their teachers.

The question of whether personality type affects student achievement was addressed by McCaulley (1974). She found that certain factors of personality type showed a significant correlation to student achievement.

Purposes of the Study

This study examined the impact that personality type may have on student and teacher differences and the effect on student grades. The study also attempted to provide some answers to the age-old problem of explaining differences in student performance.

The following questions were addressed in this study:

1. Do agriculture college faculty personality types differ from agriculture college student personality types?
2. Does personality type affect agriculture college student grade point averages (GPA)?

Methods and Procedure

Instrumentation

The Myers-Briggs Type Indicator (MBTI) Form G was selected to measure personality type of faculty and students. Form G has a test re-take reliability of .87. Interpreting the Myers-Briggs Type Indicator requires a distinctive language. The MBTI identifies four individual preferences or strengths that persons use in gathering information and making decisions. These four preferences are selected from a set of eight variables; stated in their simplest form, they are:

1. Extroversion (E) or Introversion (I); Extroverts (E) are primarily stimulated or get their source of energy from the outer world of people and things, whereas, Introverts (I) are primarily energized by the inner world of thoughts and contemplation.

2. Sensing (S) or Intuition (N); Sensing (S) type of people gain information most keenly through the use of the five senses - sight, sound, touch, taste, smell; while Intuitives (N) whose senses are less developed, prefer to gain their information through a less defined sixth sense of hunch. These two methods of perception, or ways of obtaining information, are opposites and one becomes more trustworthy than the other.

3. Thinking (T) or Feeling (F); Thinking persons prefer to use a logical, impersonal analysis for decision making, while feeling persons choose to use a more personal "from the heart" analysis. Persons may at times use both decision making styles, but find one style to be the more reliable for them.

4. Judging (J) or Perceiving (P); Judging (J) types prefer an orderly, organized lifestyle, whereas; Perceptive (P) types prefer to experience life as it happens. Each person lives in both types of lifestyles from time to time, but prefers one more than the other.

Using four of the eight personality factors, a person's personality type is derived from a possible combination of 16 types. As an example the ISTJ type would be an Introverted (I), Sensing (S), Thinking (T), Judging (J) type, represented in 6% of the general population.

A general population distribution percentage, as derived from numerous studies, indicates: Introverts (I) have 25% of the population, Extroverts (E) 75%, Sensing (S) 75%, Intuitive (N) 25%; Thinking (T) 50%, Feeling (F) 50%, Judging (J) 50%, and Perceptive (P) 50%.

Kiersey and Bates (1978) found that certain combinations of personality factors were helpful in explaining differences; he calls these groups temperaments. He used four temperament groups, they are: Sensing-Judging (SJ), Sensing-Perceiving (SP), Intuitive-Feel-

ing (NF), and Intuitive-Thinking (NT). Personality types falling into these four combinations are believed to have many common preferences, strengths, and weaknesses.

The MBTI is not intended to measure psychological maladies, but it measures normal tendencies and characteristics. Knowledge of personal preferences can help teachers understand and predict student performance.

Procedure

Form G of the MBTI was administered to 413 students in four large classes in the College of Agriculture at the University of Nebraska. Classes were selected that were required by all majors. Students from all four levels, freshmen, sophomores, juniors, and seniors were present in these classes.

Each student reported his/her grade point average. Grade point averages were classified in ranges of 0.4 points beginning at 4.0 and progressing downward. Agricultural faculty with teaching appointments were also administered the MBTI as part of a teaching improvement workshop.

The Chi-square statistic was used to test for the presence of differences in frequencies among the levels of each variable. A probability level of .05 was selected to indicate significance.

Findings

There was a significant difference between faculty personality types and student personality types when considering all types as a whole. The distribution of students and faculty in the sample by type and the expected distribution according to MBTI general population standards is included in Table 1. Major discrepancies exist between this sample and the general population of numerous other studies by Myers (1962) for several distinct personality types. In general, Table 2 indicated that proportionately more introverted (I-54%), sensing (S-84%), thinking (T-69%), and judging (J-57%) students are enrolled at the University of Nebraska, College of Agriculture than extroverted (E-46%), intuitive (N-16%), feeling (F-31%), and perceptive (P-43%) type students. The reasons for the differences are not attainable from this study, but samplings from rural populations suggest that introverted (I) sensing (S) types may be more numerous than would be expected in the general population.

Table 3 depicts the distribution of students by Kiersey's temperament groups. the largest group was sensing-judging (SJ-51%), followed in descending order by sensing-perceiving (SP-32%), intuitive-thinking (NT-9%), and intuitive-feeling (NF-8%). The last two groups of intuitive types combined were slightly less than the 24% found in the general population.

Table 1

Distribution of Undergraduate Students and Faculty by MBTI Type and Sex in the College of Agriculture University of Nebraska, as Compared to the General Population

MBTI type	Student % (n=413)	Faculty % (n=71)	Population %
ESTJ	15	11	13
ESTP	13	1	13
ESFJ	6	0	13
ESFP	2	1	13
ENTJ	2	6	5
ENTP	2	3	5
ENFJ	1	11	5
ENFP	4	3	5
ISTJ	22	23	6
ISTP	10	1	6
ISFJ	8	8	6
ISFP	6	1	6
INTJ	1	14	1
INTP	3	3	1
INFJ	1	10	1
INFP	2	3	1

Note. E=Extravert, I=Introvert, S=Sensing, N=Intuition, T=Thinking, F=Feeling, J=Judging, P=Perceiving.

$\chi^2=57.7$. Significant .01, student and faculty samples were different when comparing overall personality types.

Tables 1 and 2 also indicate that there were considerably more introverts (I-63%) than extroverts (E-37%). Among faculty, the slight difference, 52% N to 48% S. The decision making dimension of thinking (T) and feeling (F) differed greatly, 62% T to 38% F. The greatest difference among faculty occurred in the lifestyle dimensions of judging (J) and perceiving (P), 83% J to 17% P.

Listing teachers by temperament groups (Table 3) indicates a different order of personality distributions: sensing-judging, (SJ-42%), intuitive-feeling, (NF-27%) intuitive-thinking, (NT-25%) and sensing-perceiving, (SP-6%). These findings differ considerably from those of Myers (1962) for typical college faculties. The teaching faculty at University of Nebraska College of Agriculture had more sensing types than are usually found. Overall differences between faculty and students by temperament groups were significant at the .01 level.

Table 2

Distribution of Undergraduate Students and Faculty by Components of Type, University of Nebrasks College of Agriculture Expressed as Percentages

	Personality Factor							
	E	I	S	N	T	F	J	P
Students	46	54	84	16	69	31	57	43
Faculty	37	63	48	52	63	27	83	17
General Population	75	25	75	25	50	50	50	50

Note. E=Extrovert, I=Introvert, S=Sensing, N=Intuition, T=Thinking, F=Feeling, J=Judging, P=Perceiving.

$\chi^2=47.1$. Significant .01, students and faculty were different when compared by components of type.

Table 3

Distribution of Undergraduate Students and Faculty by Temperament Groups, University of Nebraska, College of Agriculture Expressed as Percentages

	Temperament			
	SP	SJ	NT	NF
Students	32	51	9	8
Faculty	6	42	25	27
General Population	38	38	12	12

Note. SP=Sensing-Perceiving, SJ=Sensing-Judging, NT=Intuitive Thinking, NF=Intuitive-Feeling

$\chi^2=36.5$. Significant .01, students and faculty were different when compared by temperament groups.

Although student and faculty groups differed considerably from their own "typical" university wide peer group, there were some similarities between students and faculty. The greatest similarity was between sensing-judging faculty and students. Students were more heavily represented than faculty in the sensing-perceiving (SP) category and the faculty had considerably more intuitive-feeling (NF) and intuitive-thinking (NT) students. The second question considered was related to student personality type and academic achievement or Grade Point Average (GPA). According to many evaluators and most students, the most important measure of success in college is student grade point average (GPA). Chi-square analysis indicated that only the extroversion (E), introversion (I), and Judging (J), Perceiving (P) components of personality type were predictors of student GPA. Table 4 indicates that introverted (I) students, in general, had higher averages than the extroverted (E) students at the .10 level. Similarly, judging (J) students received higher grades than perceptive (P) students. The difference was significant at the .01 level (Table 5). Again, the reasons for these differences cannot be explained from these data, but this behavior was found to be consistent with findings of Myers (1962).

Table 4

Relationship of MBTI Type (E-I) to Student Grade Point Average (GPA)

GPA	Extrovert		Introvert	
	Observed	Expected	Observed	Expected
4.0	1	3	6	4
3.6-4.0	10	14	21	17
3.2-3.6	31	37	49	43
2.8-3.2	60	55	59	64
2.4-2.8	40	37	40	43
2.0-2.4	24	20	20	24

Note. $\chi^2=9.63$. .10. Introverts had a tendency to have higher GPA's than extroverts.

Conclusions/Implications

This study confirms previous studies by Myers (1962) on personality type and student learning. However, until now little has been known about the personality type composition of students and faculty in colleges of agriculture. These findings may have major implications on the approaches used to improve teaching and learning for agricultural college students. McCaulley (1974) found that dif-

Table 5

Relationship of MBTI Type (J-P) to Student Grade Point Average (GPA)
(n=381)

GPA	Judging (J)		Perceptive (P)	
	Observed	Expected	Observed	Expected
4.0	6	4	1	3
3.6-4.0	22	18	9	13
3.2-3.6	53	45	27	35
2.8-3.2	70	68	49	51
2.4-2.8	34	45	46	35
2.0-2.4	20	25	44	19

Note. $\chi^2=17.00$. Significant .01, J students had higher grade point averages than P students.

fering personality types prefer to learn in different ways. Kiersey (1978) and Lawrence (1982) both suggest that teaching strategies should vary for differing personality types. The high number of sensing students found in this study makes this need more evident.

Results of this study confirms to effective teachers what they already perceived; that students whose personality types differ, achieve differently. However, until now they did not know how they differed, or they could not express their differences in a tangible way.

This study found that the student population had a much higher proportion of introverted, sensing, and judging types than the general expected college student population, and that faculty differed from the typical college faculty as described by Myers (1962). There were many more sensing type faculty teaching agriculture than can be expected for a typical university faculty.

The differences between distribution of type in student and faculty populations present a challenge to teachers who are concerned about improving their instruction. The greater number of sensing type students in this sample suggests that those who major in agriculture may have a greater need to learn in an environment where the teaching material being presented is practical and usable for the present, and that they may have less need or desire for theory or future implications of subject matter. This notion is consistent with Kiersey (1978) and Golay (1982).

Discussion

These findings not only have implications for what is taught, but more importantly for HOW it is taught. Lawrence (1982) helped define this teaching-learning problem. He described sensing type students as linear learners (sequential, step-by-step) and intuitives as more global learners. The greater problem may be with intuitive teachers who are not being aware of typed differences. They may emphasize concepts, relationships, and the implications of facts for understanding larger problems rather than emphasizing practical applications. This may be at the expense of the sensing type student whose preference is for facts, practical information, and concrete skills.

Sensing students frequently comment that "I get my best grades in laboratory or field experience and do less well in structured classes." Since the majority of students are sensing types, agricultural teachers need to increase "real-life experience" learning opportunities in their courses. Sensing students learn best while actively engaged in "doing a thing." At this time their best learning style is used: touching, seeing, hearing, tasting, and smelling. Many sensing students say that they chose to major in agriculture because it was the most practical of the majors (Barrett, 1984).

In this study many sensing-perceiving (SP) students, the super realists, were found. These students, more than any others, want action learning. Massive amounts of reading and homework do not motivate them. Could it be that these students drop out of college early because their preferred learning environment is not to be found?

This study revealed that personality type is related to students' GPA. Judging (J) students tended to have higher averages, than perceiving (P) students. There are several possible reasons for this difference. First, J type students like deadlines and plan their work toward those deadlines. Their general work pattern tends to be more narrow, focusing on fewer things at one time. Perceiving students do not like deadlines and tend to be doing many things at a time; thus they may not discipline themselves with strict study habits.

Introverted (I) students had higher GPA values than extroverts (E). There may be many reasons. One possibility is that Introverted students have the ability to concentrate on one thing at a time with less distraction than do Extroverted students. Another reason may be that the agricultural college environment, at least in Nebraska, is more conducive to introverts who prefer working alone. It could be that a predominance of Introverted teachers whose learning styles differ, discourages Extroverted students who like a more active learning environment.

In summary, the Myers-Briggs Type Indicator is a powerful tool in examining differences in personality. This study has shown

that student achievement is a function of personality type. Clear differences in personality type distribution between teachers and students were also found. The presence of a high percentage of sensing students majoring in agriculture require college of agriculture faculty to re-think their philosophy toward students. Hopefully, it may encourage some agriculture college faculty to re-design their teaching methods and activities.

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