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Value Intensity Identification of Environmental Studies/Natural Resources Majors

Melissa Millard[1], Environmental Studies/Natural Resources
Susan Fritz[2], Department of Agricultural Leadership, Education and Communication
University of Nebraska-Lincoln, Lincoln, NE 68683-0709

Abstract

Undergraduate major selection is one of the first steps in attaining a satisfying career. Research confirms that values play a critical role in the selection process, regardless of the academic endeavor. This study determined Environmental Studies/Natural Resources majors at the University of Nebraska-Lincoln have a significantly different identification of value intensity than a national sample of university students and this information is critical to recruitment, advising and career placement efforts. A one-sample z test revealed five of 21 sub-scales were statistically different for the University of Nebraska-Lincoln group.

Introduction

Values are standards which people deem desirable or worthy (Fritz et al., 1997). Values provide standards for behavior (Brown, 1996; Brown and Crace, 1996) and construct a foundation for interpreting experiences (The Seven Vectors, 1993) and judgment of oneself and others (Rokeach, 1973). One's behaviors and attitudes originate from value systems (Dodge, 1986). Motivation, life plans, and goal setting all emerge from one's value set (Hanna, 1995; Brown and Crace, 1996, Fritz et al., 1997) and serve as the basis for attributing worth. Individuals acquire their values through interactions with society (Brown and Crace, 1996) and more specifically from parents, family, and peers (Fritz et al., 1997).

Value development is a three-step process (Chickering, 1993). The first step is humanizing values--moving from immediate application of adamant beliefs and using principled thinking in countering one's own self-interest with the interests of one's fellow human beings. The second step is personalizing values--knowingly affirming core values and beliefs while respecting other points of view. The third step is development of congruence--aligning personal values with socially responsible behavior. Value personalization leads to congruence and congruence occurs when personal values are consistent with an individual's behavior and result in minimization of internal debate. The absence of congruence cultivates stress (Fritz et al., 1997).

Rokeach (1973) reports that values contain a cognitive dimension used in decision making. Therefore, values are central to life role selection (Brown and Crace, 1996). Brown and Crace purport values acclimate individuals to possibilities that provide desirable outcomes. Identification of possibilities related to values results in strategies to attain goals and cause action. Consequently, satisfaction occurs when individuals' choices and achievements coincide with their values (Brown, 1996; Brown and Crace, 1996).

Krumboltz et al. (1979) theorized that individuals will choose a career if they have been positively influenced and

[1] Undergraduate Student
[2] Assistant Professor

reinforced by a valued person. Research indicates college students view parental attitude (valued people) important in career selection (Moore, 1983; Upcraft, 1984). Instructors influence career choice as well through their feed back regarding student talent and ability (Phelan, 1979; Newman and Newman, 1992). Peers also influence career selection. Bradshaw's 1975 study found that fellow students have a substantial influence on academic major choice. Bradshaw reports, at time of entry, the larger the percentage of students holding a given belief, the greater the probability that students with congruent attitudes will persist in holding them. Students not holding that attitude will change and conform to the beliefs of the majority.

Past experiences and aptitude perception also influence career choice (Curry et al., 1994). Students seek to implement self concept in occupational selection (Super, 1953; Super, 1963). Ideally, career selection is based on ability and interest (Upcraft, 1984; Zytowski, 1994). Therefore, individuals choose a career by discerning what they enjoy doing, what stimulates and completes them, what uses their talents and challenges them to acquire new ones, and what manifests all their promise for excellence (Chickering, 1993).

Values play a critical role in selecting a satisfying career as well (Hanna, 1995; Brown and Crace, 1996). Some occupations may be viewed as auspicious, as they are the means for attainment of a value or value set (Cochran, 1986). Katz (1973) agrees with this contention, concluding that individuals view certain occupations as vehicles for value realization (as cited in Cochran, 1986). Several studies reinforce these contentions by establishing that individuals hope to select an occupation that is congruent with their values (Super, 1990; Brown, 1996; Brown and Crace, 1996). In a related study, Judge and Bretz (1992) found that the greatest predictor of job acceptance was congruence between values evident in the job and the values held by the candidate.

The purpose of this study was to identify the intensity of value identification of Environmental Studies/ Natural Resource majors in the College of Agricultural Sciences and Natural Resources (CASNR) at the University of Nebraska-Lincoln and to compare the intensity to the value intensity of other university students. In this study, value intensity is defined as the relative extent to which values impact decision making and behavior.

Method

The entire population (48) Environmental Studies/ Natural Resources majors 19 years of age or older were surveyed during Spring, 1998 using The Values Scale (Super and Nevill, 1985). The Values Scale is a 106 attitudinal item instrument developed by an international consortium of vocational psychologists. Respondents use a four-point Likert-type scale (1=little or no importance to 4=very important) to react. Research with The Values Scale has included college and university samples (2,140 students) designed to represent arts, letters, science, and technical students, as well as the major regions of the United States. Respondents in this study will be compared to the norm-referenced university group. Therefore, the national college and university samples will be referred to as "other university students."

The survey packet included: 1) The Values Scale, 2) an informed consent letter, 3) a mark-sense sheet, and 4) a self-addressed, stamped, return envelope. An additional survey packet was sent three weeks after the first mailing to those students who had not responded to the initial request. Twenty-four students returned their questionnaires for a response rate of 50%.

Statistical analysis was conducted using SPSS-PC version (Norusis, 1990). Means, standard deviations and the overall (r=.95) were calculated for the 106 items. The items were then collapsed into 21 sub-scales. Means and standard deviations were calculated for each sub-scale. A one-sample z test was used to calculate the significance of sub-scale survey results and sub-scale norm-referenced scores for university students (Gravetter and Wallnau, 1996). Sub-scale, norm-reference scores were obtained from The Values Scale: Theory, Application, and Research Manual (Super and Nevill, 1989). The alpha level was set at .05, with a critical region of ± 1.96.

Results and Discussion

Five sub-scale means were found to be statistically different between the respondents (Environmental Studies/ Natural Resources majors at UNL) and the population (other university students). The statistically different sub-scales were: 1) Advancement (z=-2.80), 2) Autonomy (z=-2.43), 3) Economic Rewards (z=-3.58), 4) Social Interactions (z=-2.85), and 5) Working Conditions (z=-2.21). Mean and standard deviation scores of the sample and the norm-referenced population and z scores are reported in Table 1.

Table 1. Environmental Studies/Natural Resources Students' Attitudinal Sub-scales and Response Means and Comparisons to Other University Student.

Sub-scales and Attitudinal Responses	CASNR Students n=24 MN[z]	SD[y]	Other University Students MN	SD	z score
Ability Utilization	17.17[x]	1.52	16.76	2.26	0.89
use all my skills and knowledge	3.46	0.59			
do work that takes advantage of abilities	3.58	0.50			
develop my abilities	3.50	0.59			
keep on learning new things at work	3.50	0.66			
have to think about what I am doing at work	3.13	0.61			
Achievement	16.88	2.29	16.92	2.47	-0.08
have results which show that I have done well	3.33	0.70			
know that my efforts will show	3.46	0.66			
reach a high standard in my work	3.38	0.58			
do something at which I am really good	3.25	0.53			
get the feeling I have really achieved something at work	3.46	0.66			
***Advancement**	13.50	2.81	15.27	3.10	-2.80
get ahead	2.88	0.74			
get ahead quickly in my career	2.58	0.65			
be able to get promotions	3.00	0.72			
be able to think in terms of advancement	2.83	0.64			
work where getting ahead is considered important	2.21	0.98			
Aesthetic	15.42	3.60	14.17	3.30	1.86
make life more beautiful	3.42	0.93			
find pleasure in the beauty of my work	3.33	0.82			
be concerned with beauty in my work	2.75	0.99			
be able to add to the beauty of the world	3.29	0.81			
be appreciated for the beauty of my work	2.63	0.93			
Altruism	15.75	2.82	15.33	3.30	0.63
help others with problems	3.13	0.74			
be involved in work in which the goal is helping people	2.79	0.78			
work in a way that makes the world a better place	3.54	0.59			
improve the welfare and peace of the world	3.00	1.02			
do work which improves things for other people	3.29	0.69			
Authority	12.71	2.53	13.69	3.25	-1.48
tell others what to do	1.71	0.81			
be able to be a leader at work	2.88	0.85			
be the one who manages things at work	2.46	0.66			
make decisions that others follow	2.42	0.72			
have authority to get things done	3.25	0.68			
***Autonomy**	13.58	2.32	15.03	2.92	-2.43
act on my own	3.17	0.76			
make my own decisions at work	3.08	0.58			
be free to get on with a job in my own way	2.71	0.81			
be my own boss	2.33	0.64			
set my own working hours	2.29	0.91			
Creativity	14.67	2.53	14.38	3.17	0.45
discover, develop, or design new things	2.88	0.68			

create something new in my work	2.92	0.72			
have a chance to try out new ideas at work	3.08	0.72			
use new ideas and methods	2.92	0.65			
be inventive in my job	2.88	0.80			
***Economic Rewards**	13.83	2.84	16.05	3.04	-3.58
have a high standard of living	2.63	0.82			
have a good income	2.92	0.72			
be well paid for whatever work I might do	2.92	0.78			
earn enough to live well	3.25	0.68			
have all of the nice things I want	2.13	0.74			
Lifestyle	15.38	1.88	15.51	2.68	-0.24
live according to my own ideas	3.54	0.51			
live my life my way	3.38	0.71			
work at what I want to when I want to	2.33	0.64			
decide what to do with my life	3.75	0.44			
plan my own work activities	2.38	0.65			
Personal Development	16.33	2.43	16.46	2.37	-0.27
develop as a person	3.50	0.59			
have ideas about what to do with my life	3.54	0.51			
find personal satisfaction in my work	3.67	0.48			
cultivate my inner life	3.00	0.98			
develop my own work life	2.63	0.71			
Physical Activity	13.26	3.40	12.91	3.20	0.54
get a lot of exercise	2.88	0.74			
take part in sports and other physical activities	2.54	1.06			
be physically active in my work	2.50	0.88			
make a real physical effort at work	2.30	0.97			
be able to be outdoors a great deal	3.13	0.95			
Prestige	13.96	3.25	14.98	3.16	-1.58
be admired for my knowledge and skills	2.75	0.85			
be recognized for my accomplishments	2.83	0.70			
be held in high esteem because of my work	2.88	0.85			
be viewed as a special person	2.92	0.88			
have people recognize the work I have done	2.58	0.88			
Risk	11.00	4.06	11.17	3.80	-0.22
do risky things	1.96	0.86			
feel that there is some risk or some danger in the work I do	1.96	1.04			
take on dangerous tasks if they interest me	2.38	1.01			
face the challenge of danger	2.00	1.10			
be able to run reasonable risks when there is something to gain	2.71	0.75			
***Social Interaction**	12.83	3.13	14.50	2.87	-2.85
do things with other people	2.92	0.78			
work in a group rather than by myself	2.04	0.81			
be with other people while I work	2.54	0.78			
have people take time to chat	2.63	0.77			
deal with a variety of people at work	2.71	0.91			
Social Relations	14.25	2.79	15.21	2.90	-1.62
be with friends	3.13	0.90			
do things with people I like	3.08	0.65			
be with my kind of people	2.25	0.85			
have a job where I can easily make friends	2.79	0.72			
work where there are friendly people	3.00	0.78			

Variety	14.54	2.72	13.72	2.65	1.52
have every day be different in some way from the one before it	2.92	1.02			
do a number of different things during the day	3.21	0.66			
change work activities frequently	2.63	0.77			
move around while doing things at work	3.00	0.78			
be able to do my work in a variety of ways	2.80	0.66			
***Working Conditions**	13.71	2.77	15.00	2.86	-2.21
have good space and light in which to work	3.33	0.64			
have good sanitary facilities (e.g., washroom) at work	2.88	0.80			
be protected from the weather while I work	1.75	0.85			
work in a place where I can really do my job	3.42	0.58			
have a comfortable temperature to work	2.33	0.87			
Cultural Identity	12.04	3.11	13.29	3.50	-1.75
live where people of my religion and race are accepted	2.50	1.02			
work where people of my ethnic origin have good job possibilities	2.33	1.05			
feel accepted as a member of my race or ethnic group	2.78	1.00			
work with people of my own background	1.58	0.65			
be true to the values of my people	2.88	1.08			
Physical Prowess	8.88	3.25	9.69	3.78	-1.05
work hard physically	2.33	1.01			
use powerful machines	1.38	0.71			
use my strength	2.42	0.97			
move big boxes and crates	1.13	0.61			
carry heavy loads	1.63	0.93			
Economic Security	16.83	2.97	16.06	2.99	1.27
be where employment is regular and secure	3.50	0.72			
have a regular income	3.25	0.68			
have a secure position	3.42	0.72			
have a feeling of economic security	3.13	0.90			
know that I can always make a living	3.54	0.66			

MN[r] =Mean, SD[y]=Standard Deviation.[x]Likert-type scale used: 1=little or no importance, 2=some importance, 3=important, 4=very important. *Significant at *P=0.05*, one-sample z score.

Statistical analysis of the surveyed responses provided significant data to confirm Environmental Studies/Natural Resources majors at UNL participating in this study have a significantly different identification of intensity of values than other university students. The five sub-scale values with significant z scores (advancement, autonomy, economic rewards, social interaction, and working conditions) can be divided into two categories: 1) human interaction, and 2) occupational rewards.

Human Interactions

The items that comprise the value sub-scale "social interaction" focus on teamwork. The negative z score indicates the sample group does not enjoy working in teams or in collaboration with others as much as their peers in other universities. Teamwork is vital to todays' corporate and government structure, particularly for Environmental Studies/Natural Resources professionals who frequently collaborate with peers from several agencies and public and private organizations to address complex environmental issues. Therefore, effective team building skills are critical to the professional success of individuals pursuing an environmental studies career. The lack of desire to function as a team member demonstrated by the mean scores limits the opportunities, career satisfaction and possible success of Environmental Studies/Natural Resources students in this sample.

Because this study was administered to students of all grade levels it would be important to compare grade level responses of students. (Unfortunately, the size of the respondent group did not allow for this comparison.) Some of this attitude related to social interaction may be the result of

an emphasis on team or group class projects, although the results of the this study do not shed any light on this possible relationship. Therefore, further study is needed to explore these attitudes related to social interaction.

The College of Agricultural Science and Natural Resources (CASNR) should continue to incorporate teamwork, group work, and collaborative projects into the Environmental Studies/Natural Resources curriculum, but that these projects be supported in class with the expertise and facilitation of team and small group dynamics faculty. This collaborative faculty approach to team and group projects would likely lead to more positive student experiences, attitudes and perceptions regarding collaborative work. Environmental studies and natural resource course content should also be reviewed to determine if it positively portrays the attributes and importance of teamwork.

Occupational Rewards

The second category, occupational rewards, includes the sub-scales of advancement, autonomy, economic rewards, and working conditions. Results indicate career advancement is not as important to Environmental Studies/ Natural Resources students in this study as it is to other university students in the United States. This may be attributed to the apparent lack of influence contingent rewards have on Environmental Studies/Natural Resources students' actions as compared to university students in general. Yet, if this scenario prevailed, another value, such as altruism or aesthetic, would have a significantly higher z score, indicating that value was more of a motivating factor for this group than their university peers. This was not the case.

Low occupational rewards scores indicate that CASNR should not focus on possible fiscal rewards related to environmental careers for promotion or recruitment into the program. Additionally, because graduate school is often viewed as a vehicle for career enhancement, continuation of education should not be portrayed as the primary means to increase extrinsic rewards to undergraduate Environmental Studies/Natural Resources students. It is possible that the low occupational reward value intensity impacts employment decisions of Environmental Studies students.

Implications

A career education program should be developed to make students aware of available opportunities in environmental studies and natural resources. This would assist students in considering career opportunities early in their program and likely minimize their hesitancy to investigate employment options in the future. Career education could inform students of the skills and qualities desired by employers. Additionally, it would aid students in assessing congruence between their goals, aspirations, and values and their chosen field of study, critical to job acceptance and satisfaction (Super, 1990; Judge and Bretz, 1992; Brown, 1996; Brown and Crace, 1996).

A pivotal point related to this recommendation is that research be done to identify essential skills and qualities desired by employers. This research should be compared to the essential skills and qualities identified by Environmental Studies/Natural Resources faculty. The results of this comparison could be used in curriculum development and revision in the Environmental Studies/Natural Resources major. Additionally, The Values Scale should be administered to all incoming students (i.e., freshmen, change of major and transfer) and an ongoing database developed. This database could assist in monitoring changes in the student attitude and values in the major as well as for refinement of marketing and recruitment plans.

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Learning and Teaching Swine Stockmanship to Undergraduates: A Laboratory Approach

M. S. Honeyman[1] and A. E. Christian[2]
Animal Science Department
Iowa State University, Ames, Iowa

Abstract

Swine stockmanship is an area of animal science that is not often taught to undergraduate students, though a large number of these students take jobs that involve working with pigs or involve managing people that work with pigs. Recent research has shown the importance of positive swine stockmanship in production settings. For three semesters, a total of eight sections (118 junior and senior students) were given a 90-minute laboratory on swine stockmanship. The lab was organized with a brief introduction using quotes about stockmanship; a mini-lecture reviewing the applicable research; a series of activities on pig handling, pig restraint, injections, flight zone, etc., and a role-playing exercise where the students put themselves in the roles of producer and pig. Students evaluated the relevance and importance of the lab and the methods used. The students gave the lab a rating of 4.46 (on a 5-point scale) for relevance and importance and 4.35 (on a 5-point scale) for innovation in teaching methods. Ninety-four percent of the students gave the lab a "4" or "5" score in these two areas. The mini-lecture and live-pig segments were ranked higher (about 4.4) than non-pig segments (about 3.6).

[1] Associate Professor
[2] Swine Teaching Farm Superintendent

Introduction

Stockmanship skills are important for successful pork producers. The importance of stockmanship or husbandry of livestock has historical connotations (Willham, 1985). At Iowa State University (ISU) about 500 baccalaureate degrees are granted annually in agriculture. Each year approximately 60 graduates embark on careers in swine production as independent producers or as employees of pig production companies. An additional 60 to 90 ISU graduates choose swine-related, agribusiness careers. Most of these students enroll in Animal Science 425 Swine Management, a senior-level course with lecture and laboratory sessions.

Stockmanship: Present but not emphasized

Based on evaluation of the undergraduate animal science curriculum at ISU, stockmanship or husbandry are peripherally addressed. Knowledge of the optimum care of pigs is frequently assumed. The "science" of animals is emphasized. Historically there has been a shift from