

Student Perceptions of Academic Work Ethic: A Preliminary Study of College of Agriculture Freshmen

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Abstract

A significant element of advising and working with freshman is assisting them in the development of their sense of identity and with it their perceptions toward academic work and a career. This study sought to describe an intact population of the freshman student population in a College of Agriculture. It is recognized that the data collected from respondents cannot be generalized to any population on a statistical basis. However, the findings may have practical implications for college of agriculture faculty and administration, and should direct researchers to further examine academic work issues in colleges of agriculture.

College of Agriculture freshmen had different perceptions of 15 academic work categories. Best predictors of some categories of academic work include gender, grade point average, and expected salary upon completion of high school. Females were found to have less positive perception of their analytical ability and creativeness when compared to their male peers. High school size was also found to differentiate respondents regarding their perception of academic work. Grade point average was found to influence the respondents' perception to their Quantity of Work category. Students with higher Grade Point Averages may see themselves producing more, but not necessarily quality, academic work.

Introduction

A significant element of advising and working with freshman is assisting them in the development of their sense of identity and with it their self-perceptions toward academic work and a career. Christie stated "Just as a work ethic implies getting to work on time, being cheerful about one's task, and working hard, an academic work ethic implies the understanding of important premises as well....The first has to do with the ownership of one's education" (2000, p.4). Buczynski (1991) found the develop-

ment of this sense of identity by freshman was important to future intellectual development and that early intervention was a key element.

Prior to 1956, it was widely accepted that college attendance resulted in changes in students' attitudes and values. In 1957, Jacobs concluded that the college years produced few significant changes in fundamental values. More contemporary research began to look more closely at college students' attitudes and values. (Chickering and McCormick, 1973; Kuh, 1976; Phelan, 1979; Astin et al, 1987; Terenzini et al., 1996).

Tinto (1987) stressed the importance of social and academic integration as a key to academic success in college. Tinto maintained that without this dual integration the student will leave college. Earlier, authors such as Terenzini, et al. (1982) stressed the importance of student integration into the institutional community as a whole, as opposed to involvement with just particular aspects of the institution. Tinto's (1987) theory supported Terenzini, et al. (1982) by showing that student persistence is related to the degree to which students integrate into the university's social and academic communities. Social interactions with faculty members and peers develop social integration. Intellectual development and grade performance lead to academic integration and success. Studies such as these have not considered pre-college characteristics nor students' academic work ethic in an attempt to determine academic success or retention. One area of study has been the importance students attach to a number of educational purposes upon entering college, and how those perceptions change during the succeeding collegiate years (Baird, 1967; Centi and Sullivan, 1967; Feldman and Newcomb, 1969; Fenske and Scott, 1973; Goldsen et al., 1960; Theophildes et al., 1984). These studies indicate that educational goals do shift by the end of the first-year and further evolve during the undergraduate experience. These studies found that entering freshmen indicated that their top purpose for a college education was either to receive a basic general education/appreciation

of ideas or vocational training/development of career-related skills and techniques. Further, Theophilides et al. (1984) found that the importance attached to the attainment of a liberal education was positively affected by the freshman year experience. Additionally positive, interaction with faculty members in an out-of-class setting was identified as a key factor in this development.

Students' academic performance of and retention are becoming a major concern for universities. Recent studies have placed a high financial value on student retention. (Dyer, et al., 1996; Glennen, et al., 1996). Dyer and Breja (1999) found that retention could be predicted by examining the criteria by which students were admitted. They also reported that traditional admission criteria were not the best predictors of academic performance and retention of agriculture students. Garton, et al. (1999) reported that best predictors of academic performance during the first year of college were high school core GPA and ACT score. Based on these findings it is generally held that students' attitudes toward academic work, their pre-college characteristics, and the experiences of the freshman year combine to shape future intellectual development. Identifying key indicators of academic success and then identifying students who may require further development in areas related to leadership and self-perception toward academic work is essential. Further, by identifying students' needs, faculty can then implement programs and policies that are focused on the academic and intellectual development of their students.

Defining leadership and identifying students that exhibit leadership skills or potential involves the measurement of certain traits or characteristics such as integrity, dependability, judgment, initiative, communication skills, responsibility, etc. By identifying pre-college characteristics that influence attitudes or perceptions toward academic work, students who may require academic advising and possibly a leadership course to develop critical attitudes and self-perceptions toward work, could then be more easily identified. Ultimately, we hope that the results of this preliminary study will establish the need for additional research in the area of academic work and identify those who may require additional academic advising or further leadership study.

Purpose and Objectives

The purpose of the study was to identify and evaluate the perceptions toward academic College of Agriculture (COA) Freshmen at a Land Grant University.

Our specific objectives include:

1. To develop an academic work categorical profile of the respondents;

2. To compare the level of perceived academic work among different subgroups of the selected group of COA Freshmen; and
3. To determine the influence of selected demographic variables that may influence a COA Freshmen's perception of their academic work.

Methods

The Human Resource Development (HRD) program at the Westinghouse Waste Isolation Division, which operates the Waste Isolation Pilot Plant (WIPP) for the US Department of Energy located near Carlsbad, New Mexico, originally developed the instrument used for this study. The instrument originated with the need to establish a development program geared toward the non-management employee.

Demographic variables in section two included gender, GPA, expected salary upon graduation, and size of high school attended. For the purpose of this study, another pilot study was conducted using 29 prospective COA students who were attending a summer workshop on campus. The prospective students were not involved in the main data collection procedure and were used to determine instrument reliability and to surface any questions or concerns.

The Cronbach's alpha reliability coefficient was .97 for the pilot test of the instrument (75 items). A Cronbach's alpha was also computed for every one of the 15 categories (5 items per category), which constitutes section one of the survey instrument. The Cronbach's Alpha Coefficients for each of the 15 Academic Work Categories are Quality of Work (.7299), Quantity of Work (.7049), Judgment (.7816), Initiative (.8387), Dependability (.7810), Analytical Ability (.8573), Adaptability to work assignments (.7392), Ability to work under pressure (.7758), Creativity (.7373), Planning and Organization (.7450), Communication skills (.6847), Interpersonal Skills (.7730), Leadership (.7946), Attendance and punctuality (.7912), Conflict resolution (.7253). The category with the highest reliability estimate was Analytical Ability (.8573). In addition, a Principle Components Analysis was conducted on the 15 academic work category summary scores. In this analysis, all 15 of the category summary scores loaded significantly (loading .400 or greater) on the first factor. The Eigen value associated with this factor was 8.817 accounting for 58.7% of the total variance in the 15 summary scores. The results of this analysis are consistent with high Cronbach's Alpha coefficients calculated for the fifteen summary scores, indicating that the instrument for this group of respondents measured a single construct, "academic work."

Since this study was preliminary, an intact

population of COA students was assessed to provide baseline data reflecting students' self-perceptions of academic work. The intact population included 72 COA students who were enrolled in the Introduction to Animal Science course, the largest COA course. Students enrolled in the course were not purposefully selected by COA faculty and staff to enroll in the course. A total of 59 surveys were collected and used for analysis. This represented a usable response rate of 82% of the subjects who were enrolled in the course.

Data were collected using optically scanned answer sheets. Data were entered into a Microsoft Excel® Spreadsheet. Data analysis was completed using procedures available through SPSS 8.0 for Windows.

Descriptive statistics were generated on the 15 instrument categories and the demographic variables. Cronbach's alpha was calculated for each of the 15 Academic Work categories. Nonparametric statistics (Mann-Whitney U Test and Kruskal-Wallis tests) were used to compare subgroups since representativeness was not obtained through the use of probability sampling approaches. Stepwise regression analysis was employed to further analyze category scores, utilizing the demographic variables as the pool of predictor variables. The .05 alpha level was established as the criterion for inclusion in the prediction equation.

Results and Discussion

The first objective sought to develop an academic work categorical profile of the respondents. Table 1 presents the means and standard deviations for the fifteen academic work categories. The highest mean of the academic work categories was "Dependability" (20.19), whereas the academic work category with the lowest mean was "Conflict Resolution" (14.53). A mean for a category (possible high score of 25) between 25-20 is considered a strength with little or no development needed in this area; a mean between 19-15 is considered within normal range for this academic work performance factor; a mean score between 14-10 indicates a need for improvement needed for this academic work performance factor; and a mean between nine and zero denotes a need for immediate improvement in this academic performance factor. Although no means were in the lowest range, some respondents did score in this range. All respondents were given an opportunity to determine their individual scores as a means to identify academic work categories where they may need to focus their attention.

The second objective sought to compare the level of perceived academic work among different subgroups of the selected group of COA Freshmen. Three demographic variables were used to select subgroups

used for analysis: gender, high school GPA, and school size, and expected salary upon graduation. Only the comparison of "expected salary upon graduation" variable failed to produce statistically significant results. The groupings for this variable were \$15,000-\$19,999, \$20,000-\$24,999, \$25,000-\$29,999, \$30,000-\$34,999, and \$35,000.

The Mann-Whitney U test was employed to make comparisons between female and male respondents. Two categories, Analytical Ability and Creativity, were significantly different at the .05 probability level (Table 2). The two highest category mean ranks for males were Analytical Ability and Creativity while the lowest mean ranks for the females were the same two categories.

Table 3 shows the results of comparing the subgroups by school size. Respondents' high school size was recoded into two groups: namely, less than 400 and greater than 400. Three categories were found to be significantly different using the Mann-Whitney U test. Those three categories are Judgment, Leadership, Attendance and Punctuality.

The conduct of a Kruskal-Wallis test for multiple samples revealed differences in Category ranks by Grade Point Average (GPA). GPA data was recoded into four groupings; ≤ 2.5 , > 2.5 and ≤ 3.0 , > 3.0 and ≤ 3.5 , and > 3.5 and analyzed using the Kruskal-Wallis test. One category, Quantity of Work, was found to be significantly (0.008 H-prob) different from other categories.

The Dunn's Multicomparison procedure was employed to determine where the difference in the mean rankings existed among the respondent subgroups to the Grade Point Average variable. Although the Kruskal-Wallis test results indicated a difference in the mean rank for the Quantity of Work variable, the Dunn's Multicomparison procedure was too conservative to statistically determine where the difference existed among the mean rankings of the four Grade Point Average subgroups.

Objective three sought to determine the affect of selected demographic variables that may influence a COA Freshmen's perception of his/her academic work. The mean academic work scores were analyzed by stepwise regression, utilizing the demographic characteristics as the pool of predictor variables. The results of the stepwise regression analysis for the respondents are presented in Table 4.

Three demographic variables were found to be significant predictors of academic work categories for the College of Agriculture Freshmen respondents. The demographic characteristics identified produced positive regression coefficients. Those characteristics included Grade Point Average, Gender, and Expected Salary upon Graduation from College. College of Agriculture Fresh-

Table 1. Categorical Profile of Academic Work by College of Agriculture Freshmen.

No.	Academic Work Categories and Descriptions	Mean ^{z y}	S.D.
1.	Quality of work--Thoroughness and acceptability of academic work produced or accomplished	18.86	3.22
2.	Quantity of work--Volume of acceptable academic work	17.66	3.38
3.	Judgment--Soundness of conclusions, decisions, and actions	17.34	3.53
4.	Initiative--Ability to take effective action without being told	15.49	4.06
5.	Dependability--Reliability in assuming and carrying out commitments, obligations, and assignments	21.39	3.34
6.	Analytical Ability--Effectiveness in thinking through a problem	18.29	3.21
7.	Adaptability to Work Assignments--Ability to learn new knowledge and complete a variety of academic assignments	17.90	3.52
8.	Ability to Work Under Pressure--Perform under unusual circumstances and in meeting tight schedules	17.90	3.86
9.	Creativity--Ability to generate worthwhile new ideas and perspectives	17.27	3.14
10.	Planning and Organization--Ability to plan and organize coursework to meet priorities	17.59	3.63
11.	Communication Skills--Effectiveness communicating with peers, advisor, and faculty	17.33	3.55
12.	Interpersonal Skills--Works effectively with others in academic context	20.19	2.97
13.	Leadership--Demonstration of leadership characteristics and qualities	18.53	3.28
14.	Attendance and punctuality--Attends class on a regular basis, ontime and ready at start of class; devotes appropriate hours to class assignments	20.39	3.11
15.	Conflict Resolution--Ability to handle conflict and disagreements between self and others (students and faculty)	14.53	4.16

^z Mean calculated from a Likert-type response scale: Always (5), Nearly Always (4), Often (3), Occasionally (2), Rarely (1), Never (0).

^y Total Category scale ranged from 0 to 25.

Table 2. Comparison of Academic Work Category Mean Ranks using the Mann-Whitney U test by Gender of Respondents.

Academic Work Category	Mean Rank		U-Value	U-Prob
	Female (n=24)	Male (n=35)		
1 Quality of Work	33.42	31.91	464.0	0.750
2 Quantity of Work	35.72	30.44	407.0	0.265
3 Judgment	29.16	33.87	404.0	0.316
4 Initiative	28.74	33.36	393.5	0.320
5 Dependability	32.52	30.86	431.5	0.721
6 Analytical Ability	25.27	36.14	306.5	0.021 *
7 Adaptability to work assignments	30.66	33.68	441.5	0.524
8 Ability to work under pressure	27.24	35.87	356.0	0.069
9 Creativity	25.42	37.04	310.5	0.014 *
10 Planning and Organization	32.74	32.35	481.5	0.934
11 Communication skills	31.08	32.56	446.0	0.754
12 Interpersonal skills	31.94	32.86	473.5	0.846
13 Leadership	32.90	30.62	422.5	0.626
14 Attendance and punctuality	34.12	31.46	447.0	0.575
15 Conflict resolution	26.88	33.68	345.0	0.142

* U-Prob < .05.

Likert-type response scale: Always (5), Nearly Always (4), Often (3), Occasionally (2), Rarely (1), Never (0).

men respondents who possessed one of these characteristics produced higher scores for certain academic work categories. Table 5 delineates the results of this analysis. In the case of Analytical Ability and Creativity Academic Work Categories, male respondents produced higher perception scores than their female counterparts.

Summary

This study measured a purposeful sample of COA students' self-perception toward fifteen academic work-related categories and attempts to identify relationships between pre-college characteristics such as high school grade point average, high school size and other influence variables, and students' self-perceptions toward academic work. COA students were grouped by demographic variables in order to conduct further analysis of data.

COA freshmen possessed different perceptions toward the 15 academic work categories. Females had less positive perception of their analytical ability and creativeness compared to their male peers. High school size was also a factor. In three academic work categories (Judgment, Leadership, Attendance and Punctuality), respondents from smaller high schools (<400) had a more positive perception toward these academic work categories than those from larger high schools. Grade point average also was found to influence the respondents' perception to their Quantity of Work category. Further study, using parametric procedures needs to be conducted with a student population to determine demographic differences toward perceptions of academic work categories.

The best predictors of some categories of academic work include gender, grade point average, and expected salary upon completion of high school. Male respondents produced a higher academic work perception

Table 3. Comparison of Academic Work Category Mean Ranks using the Mann-Whitney U test by High School Size of Respondents.

Academic Work Category	Mean Rank		U-Value	U-Prob
	=<400 (n=34)	>400 (n=25)		
1 Quality of Work	35.36	28.04	376.0	0.122
2 Quantity of Work	35.00	28.60	390.0	0.177
3 Judgment	36.61	25.00	300.0	0.013 *
4 Initiative	33.49	28.35	380.5	0.273
5 Dependability	32.78	29.60	415.0	0.492
6 Analytical Ability	35.18	26.83	344.0	0.076
7 Adaptability to work assignments	32.40	32.66	483.5	0.956
8 Ability to work under pressure	34.76	28.98	399.5	0.224
9 Creativity	34.78	28.94	398.5	0.217
10 Planning and Organization	35.94	27.14	353.5	0.064
11 Communication skills	34.59	28.06	376.5	0.164
12 Interpersonal skills	35.15	28.36	384.0	0.150
13 Leadership	35.54	25.10	302.5	0.026 *
14 Attendance and punctuality	36.29	26.58	339.5	0.040 *
15 Conflict resolution	30.70	31.46	433.0	0.026

* U-Prob < .05.

Likert-type response scale: Always (5), Nearly Always (4), Often (3), Occasionally (2), Rarely (1), Never (0).

Table 4. Comparison of Academic Work Category Mean Ranks using the Kruskal-Wallis test by GPA of Respondents.

Categories	Mean Rank				H-Value	H-Prob
	=<2.5	>2.5&<3.0	=>3.0&<3.5	=>3.5		
	n=8	n=11	n=23	n=17		
1 Quality of Work	34.94	30.18	28.46	37.4	2.938	0.401
2 Quantity of Work	32.38	29.14	24.63	43.31	11.857	0.008 *
3 Judgment	35.36	29.68	28.42	36.19	2.456	0.483
4 Initiative	34.64	27.55	29.02	35.17	2.034	0.565
5 Dependability	32.94	33.73	24.94	37.89	5.885	0.117
6 Analytical Ability	43.50	32.45	26.28	33.64	5.669	0.129
7 Adaptability to work assignments	30.69	33.86	32.17	32.86	0.152	0.985
8 Ability to work under pressure	30.19	30.05	33.6	33.4	0.453	0.929
9 Creativity	37	38.05	29.9	30.86	2.11	0.550
10 Planning and Organization	33.06	28.91	26.6	40.9	7.188	0.066
11 Communication skills	38.31	27.5	30.85	33.33	1.834	0.608
12 Interpersonal skills	34.13	29.77	30.48	35.62	1.194	0.754
13 Leadership	34.29	23.55	31.02	35.26	3.276	0.351
14 Attendance and punctuality	34.56	25.86	30.23	37.79	3.596	0.309
15 Conflict resolution	31.86	34.77	31.33	28.25	1.01	0.799

* H-Prob < .05.

Likert-type response scale: Always (5), Nearly Always (4), Often (3), Occasionally (2), Rarely (1), Never (0).

Table 5. Stepwise Regression Analysis Academic Work Categories for College of Agriculture Freshmen

Category	Variable	R ²	b	t	p<.05
#2 Quantity of Work	GPA	.069	2.168	2.980	.004
#6 - Analytical Ability	Gender	.081	1.766	2.165	.035
#9 - Creativity	Gender	.084	1.870	2.313	.024
# 11 - Communication Skills	Salary	.114	.756	2.434	.018

Variables were coded: GPA 1- =<2.5, 2- >2.5&<3.0, 3- =>3.0&<3.5, 4- =>3.5
 Gender 1=Female, 2=Male
 Salary: 1=\$15,000-\$19,999, 2= \$20,000-\$24,999,
 3=\$25,000-\$29,999, 4=\$30,000-\$34,999,
 and 5= >\$35,000.

spondents produced a higher academic work perception score for the categories of Analytical Ability and Creativity. Grade point average was a predictor of higher respondent perception scores for the category of Quantity of Work. Students with higher Grade Point Averages may see themselves producing more, but not necessarily quality, academic work. Expected Salary upon Graduation was a predictor of high respondent perceptions toward the category of Communication Skills. Further quantitative and qualitative research is needed to identify other variables that influence a student's perception toward academic work.

Although this was a preliminary study, the results imply the potential utility of this instrument. The instrument can be used as a tool for student self-assessment or be employed in a group context. The Academic Work instrument, coupled with another instrument (i.e., learning styles), can assist teachers and academic advisors in counseling students about their academic performance. With sufficient evidence generated from this instrument, advisors and academic program coordinators could develop workshops that would focus on low academic work perceptions of college of agriculture subgroups of students. College of agriculture academic program coordinators should consider administering this instrument through a number of methods: Individual students, high school seniors interested in an agriculture degree, and some subgroups of freshmen already enrolled in a college of agriculture.

It is recognized that the data collected from respondents cannot be generalized to any population on a statistical basis. However, the findings may have practical implications for COA faculty and administration, and should direct researchers to further examine academic work issues in colleges of agriculture.

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