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The Influence of Self–Esteem and Selected Demographic Characteristics on First Semester Academic Achievement of Students Enrolled in a College of Agriculture

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The primary purpose of this study was to determine the influence of self–esteem and selected demographic characteristics on academic achievement among students at the freshman level in the College of Agriculture at Louisiana State University. The sample of the study was all students at Louisiana State University enrolled in the Introduction to Agriculture course which was a requirement for agriculture students at the freshman level. Three instruments were used for data collection. The Adult Form of the Coopersmith Inventory was administered at the beginning of the first semester of college enrollment. A researcher designed questionnaire was used to collect demographic information. A third instrument was a recording form on which data from the Office of the University Registrar were downloaded and stored. Using multiple regression analysis, a significant model was identified which explained 7.7% of the variance in academic achievement. The variable that had the greatest impact on academic achievement was membership in a departmental student organization. The variables membership in a service organization, participation in sports, and the pretest self–esteem score also entered the model.

Key words: self–esteem, academic achievement, college of agriculture, university freshmen

Introduction

Importance of Agriculture

Agriculture is a very important enterprise in the modern world. Nowhere is the vital nature of this industry more clearly conveyed than through the fact that "every 3.6 seconds someone dies of hunger" (The World Hunger Problem, 2009, p. 2).

With the present world population of approximately 6 billion people, one farmer in the United States produces the food to feed 129 people, of which 101 live in the United States and 28 abroad (Facts about American Agriculture, 2007). Certainly, the agricultural endeavor of food production addresses the basic physiological needs of individuals in today's global society. It also speaks to the power which results when a country can provide food for its people, and lends itself to the importance of education regarding agriculture.

Years ago Mayer and Mayer (1974) stated:

> The failure of our secondary schools and liberal arts colleges to teach even rudimentary courses on agriculture means that an enormous majority, even among well–educated Americans, are totally ignorant of an area of knowledge basic to their daily style of life, to their family economics, and indeed to their survival (p. 84).

Others have commented that in recent years issues related to agriculture have become more compelling for the general public as well as the profession of agricultural education (Powell, Agnew, & Trexler, 2008). The "*Alar Scare*" in 1989 involved the use of the chemical

daminozide (Alar) which keeps fruit firm and full–colored beyond its natural shelf–life (Egan, 1991). Health safety became an issue when it was reported that Alar caused cancer. Financial loss resulted within the apple industry which was brought on by panic resulting from the lack of education about agriculture (Egan, 1991). This serves as a good example of the importance of some knowledge of agriculture. An understanding of how the American system works to protect and support the agricultural industry would have gone a long way to preclude this incident.

In addition to the need for the education of people about agriculture, there is a need to educate young people to become leaders in agriculture. This nation's forefathers realized the importance of and independence that a strong agricultural system could provide. A substantial underpinning of this system was the establishment of land grant universities to promote the knowledge and research necessary to a sound, progressive agricultural industry (Mcdowell, 2003). Ball, Garton, & Dyer (2001) have commented that "change has been a defining characteristic of agriculture" (p. 54), and they considered education as a means to address the issue of the preparation of high caliber individuals ready to function in an agricultural industry which presently is rapidly changing. As colleges of agriculture contribute to the industry via research and development, it is also critical that their contribution includes an environment which provides for students the opportunity for the enhancement of academic performance.

Academic Achievement and Self–Esteem

When writing about academic performance, one might discuss variables which influence academic success. Educators and researchers of the past have considered self–esteem of students to be one of those variables. Yet, academic psychologists have not always been in agreement regarding the benefits and functioning of self–esteem. Some (Brown & Marshall, 2006) believed this to be due in part to a "…lack of agreement regarding the construct itself" (p. 4). It is true there have been many definitions of the term self–esteem. To quote Fleming and Courtney (1984), "it is not possible to address all topical issues in self–esteem research, because the literature is too vast" (p. 404). It is beneficial, however, to reflect upon philosophers of old, along with earlier psychologists and sociologists who expressed their thoughts regarding the self. William James (1890) analyzed subjective experience and what he considered the significance of the self. James (1890) concluded that it was difficult to draw a line between what a man called "me" and what he called "mine" (p. 291). He (James, 1890) also concluded that human aspirations and values had an essential role in determining whether individuals regard themselves favorably.

Sociologist G. H. Mead (1934) contributed to the topic of self–esteem, elaborating on what James (1890) called the social self. Mead's concern as a sociologist dealt with the process by which an individual becomes a compatible and integrated member of his/her social group. According to Mead (1934), this process involved the internalization of the ideas and attitudes expressed by the key figures in the individual's life.

While the views of James and Mead concerning self–esteem were formulated relatively early in the emergence of psychology and sociology, others have expanded on their constructs. Coopersmith (1981) stated that self–esteem "refers to the evaluation which an individual makes and customarily maintains with regard to himself" (p. 4–5). This evaluation expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself/herself to be "capable, significant, successful, and worthy" (Coopersmith, 1981, p. 5). Coopersmith (1981) stated "in short, self–esteem is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself" (p. 5).

Coopersmith (1981) suggested that at some time preceding middle childhood "the individual arrives at a general appraisal of his worth, which remains relatively stable and enduring over a period of several years" (p. 5). While this appraisal can presumably be affected by "specific incidents and environmental changes" (Coopersmith, 1981, p. 5), it may revert to its customary level as conditions return to their "normal" and typical course (Coopersmith, 1981, p. 5). Self–esteem may also vary across different areas of experience, as well as according to sex, age, and other role defining conditions (Coopersmith, 1981). For the purpose

of the present discussion, self–esteem will be defined according to that referenced by Coopersmith (1981) as "the evaluation which an individual makes and customarily maintains with regard to himself" (p. 4–5).

Development of Self–Esteem in the Individual

Schore (1994) targeted the orbitofrontal region in the cerebral cortex of the brain to be uniquely involved in social and emotional behavior. He considered this area to underlie "the emergent psychological affect regulatory function which evolves in the critical period of primary socialization of infancy, the practicing period (10–12 to 16–18 months)" (Schore, 1994, p. 56–57). In consideration of the caregiving relationship, one can surmise that the child's first judgment of self is made at home where he/she is either nurtured by warm loving parents who consistently convey their unconditional acceptance of the child, or where he/she is rejected by cold, hostile, or disapproving parents (Coopersmith, 1981).

The interaction with parents expands as the child relates to others outside the family. The development of self–esteem continues as the child enters school. His/her opinion of self may be dependent upon the way in which the child interprets the teacher's reaction to his/her performance and the performance of his/her classmates (Crocker & Cheeseman, 1988).

Hall (1924) deemed the adolescent period as one of "storm and stress" (p. xiii), a description he borrowed from Rousseau and other European writers. He characterized this period of development as one full of contradictions and wide mood swings. Authors have addressed student apathy (Raffini, 1986), overachievement (Shoss, 1992), and group affiliation (Brown & Lohr, 1987) during the adolescent years.

The College Years

Fast forward to the college years—they are a time of excitement, transition, and adjustment. It is understood that at this point in history, there is increased necessity and for some more opportunity to attain the goal of completing a degree from a college or university. The university setting is now home to a more diverse group of young people. A segment of the students presently enrolled are those students who represent the first members of their families to attend college or first–generation college students (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Broido (2004) characterized this generation of college students according to their racial and ethnic diversity. She (Broido, 2004) considered them to be "poised to be the generation most able to transform how they, and the larger world, think about and act on these issues" (p. 83) of diversity. Researchers have studied the adjustment to college, examining the internal and external contingencies of self–worth and their relationship to academic competencies (Crocker, 2002). They have also studied the collective self–esteem of college students (Crocker, Luhtanen, Blaine, & Broadnax, 1994), school belonging (Pittman & Richmond, 2007), and living arrangements such as Experimental Living Learning Residences (LLR) of college students (Pascarella & Terenzini, 1980).

Russell (1993) has called for a strong commitment to youth development in order to maintain strong programs of teaching and research in colleges of agriculture. He (Russell, 1993) has warned of the serious "brain drain" (p. 1) away from agriculture that he perceived to be underway at the time of his writing. He suggested colleges of agriculture should redirect their focus to the development of youth as a major human resource required for a viable agricultural industry in the years that were to follow (Russell, 1993). It becomes incumbent upon those involved in the education of agriculture students to discover ways of predicting academic success of students in order to meet the challenges presented.

Statement of the Problem

The primary purpose of this study was to determine the influence of self–esteem and selected demographic characteristics on academic achievement among students at the freshman level in the College of Agriculture at Louisiana State University. More specifically, the study sought to determine the following for students at the freshman level in the College of Agriculture at Louisiana State University.

1. Describe students on the following demographic characteristics: (a) Race; (b) Gender; (c) Place of residence during the first semester of college; and (d) Whether or

not the student held membership in selected groups and organizations during the first semester of college.
2. Determine the self–esteem of the students at the pretest as measured by the Adult Form of the Coopersmith Inventory.
3. Describe the students on academic achievement as measured by first semester grade point averages.
4. Determine if a model exists explaining a significant portion of the variability in academic achievement, as measured by the first semester grade point average, from the following: (a) Self–esteem at the beginning of the semester; (b) Race; (c) Gender; (d) Place of residence during the first semester of college; and (e) Whether or not the student held membership in selected groups and organizations during the first semester of college.

Methodology

The design of the study was correlational exploratory. The target population for the study was defined as all students at the freshman level at Louisiana State University. The students at the freshman level were defined by the researchers as those students in their first semester of college enrollment. The accessible population was defined by the researchers as all students at Louisiana State University enrolled in the Introduction to Agriculture course which was a requirement for agriculture students at the freshman level. The sample was defined as 100% of the accessible population in attendance at the class session during which data were collected.

A non–clinical consent form was completed by each student prior to the completion of the three instruments which were used for data collection. The first instrument was the Adult Form of the Coopersmith Inventory used for individuals over 15 years of age. This form consists of 25 items or statements to which the student responds "like me" or "unlike me" (Coopersmith, 1987, p. 7). The statements are related to one's attitude about self and are indicative of high self–esteem or low self–esteem. The measures of self–esteem have been based on a general theory of self–esteem and its relationship to academic performance (Mental Measurements Yearbook, 2007). Cronbach's alpha reliabilities of this instrument for age groups 16–19 and 20–34 are $\alpha = .80$ and $\alpha = .81$ respectively (Coopersmith, 1987).

The second instrument was a researcher–designed questionnaire used to collect demographic information including gender, place of residence during the first semester of college, and group affiliation. The content validity of the demographic form was established through a review by a panel of experts.

The third instrument was a recording form on which data from the Office of the University Registrar were downloaded and stored. Specific demographic and academic variables were selected from the review of literature in accordance with the research objectives of the study. There was no individual identifying information included in the downloaded data in order to assure complete confidentiality of research subjects.

The researchers obtained permission from the Dean of the College of Agriculture at Louisiana State University to conduct the study using College of Agriculture students. The instructor for the Introduction to Agriculture course was contacted in advance of the administration of the instruments in order to determine the date at the beginning of the semester on which data would be collected. On the day of data collection during the fall semester of the 2008–2009 academic year students were assured of confidentiality. A total of 218 students were included in the data collection process.

Findings

The first objective of the study was to describe the students at the freshman level in the College of Agriculture at Louisiana State University on selected demographic characteristics. This information was collected at the time of the pretest measurement at the beginning of the course. The students were described on the following demographic characteristics: (a) Race; (b) Gender; (c) Place of residence during the first semester of college; and (d) Whether or not the student held membership in selected groups and organizations during the first semester of college.

Students were described on their race. Four (1.8%) of the students did not report information regarding their race. Seventeen (8.0%) of the students reported they were Black/Non–Hispanic, while 180 (84.1%) indicated they were White/Non–Hispanic. In addition, 14 (6.5%) of the students indicated they were Hispanic and 2 (0.9%) reported they were Asian. One respondent (0.5%) indicated "*Other"* as his/her race but did not specify the "*Other"* race.

Another variable on which participants were described was gender. Of the 218 students at the freshman level who were participants in the study, 46 (21.1%) were identified as male and 172 (78.9%) were identified as female.

Regarding the place of residence during the first semester of college enrollment, of the 188 respondents to the pretest demographic survey 32.4% (n = 61) of the students indicated they lived on campus. Fifty–seven (30.3%) of the students reported they lived in the Agriculture Residential College Hall on the campus of Louisiana State Uiversity. Twenty (10.6%) of the students reported they lived off campus with their parents, while 50 (26.6%) indicated they lived off campus in an apartment or similar living arrangement.

Another characteristic on which students were described was their membership in selected groups and organizations during the first semester of their freshman year of college. These data were collected as part of the questionnaire administered to the students at the pretest data collection point. A total of 188 students responded to these items at the pretest; however, percentages do not sum to 100 since respondents were asked to check all that applied to them from among the items available. The organization/group that was reported by the largest number of students (n = 62, 33.0%) as one in which they were participating was *"Social Sorority/Fraternity"* (see Table 1). The organization/group that was reported by the second largest number of students at the pretest was "*Service Organization"* (n = 54, 28.7%). Additionally, 38 (20.2%) individuals reported that they participated in an "*Other"* organization/group. The "*Other"* organizations/groups reported by these students are included as a note to Table 1.

Table 1

Participation in Organizations and Groups during the First Semester of College Enrollment Reported by Students in the College of Agriculture at Louisiana State University

	Beginning of Semester	
Activity	*n*	%
Social Sorority/Fraternity	62	33.0
Service Organization	54	28.7
Departmental Student Organization	37	19.7
Religious Organization	34	18.1
Sports	27	14.4
Professional Organization	26	13.8
Collegiate FFA/Collegiate 4–H	17	9.0
Brock and Bridle Club	16	8.5
Academic Fraternity	14	7.4
Student Government	11	5.9
Band	3	1.6
Cheerleader	2	1.1
University Publication	1	0.5
Other	38[a]	20.2

Note. Percentages do not sum to 100 because respondents were asked to mark all that apply.

[a]Of the 38 survey participants responding "Other" at the pretest measurement, all respondents provided defining information including "*Pre–Vet Club"* (n = 12), "*Dairy Science Club"* (n = 9), "*Wildlife and Fisheries Club"* (n = 3), "*Riding Team"* (n = 2), "*SDA"* (n = 2), "*Wake Club"* (n = 2). Twelve additional clubs were reported by one respondent each.

Objective Two

Objective two of the study was to determine the self–esteem of students at the freshman level as measured by the Adult Form of the Coopersmith Inventory. The Adult Form of the Coopersmith Inventory was administered as a pretest measurement at the beginning of the first semester of college enrollment. The total self–esteem score is reported by totaling correct responses and multiplying them by four. The term "*self–esteem"* does not appear on the form (Coopersmith, 1987, p. 7). The omission was intentional in an effort to prevent biased responses. The Cronbach's Alpha reliability coefficient for the self–esteem instrument at the pretest measurement was $\alpha = .79$. The mean score for self–esteem at the beginning of the semester was 70.43 (SD = 17.64). The highest value recorded was 96.0 and the lowest value was 24.0. The largest number of students (n = 57, 30.3%) had self–esteem scores within the range of 71 to 80. Eighteen (9.6%) students had scores that were 91 or above. Complete results regarding self–esteem scores are presented in Table 2.

Table 2

Pretest Self–Esteem Scores of First Semester Freshman Students in the College of Agriculture at Louisiana State University

Pretest Score[a]	*n*	%	Normative Category
91 or more	18	9.6	High
81–90	37	19.7	High
71–80	57	30.3	Medium
61–70	23	12.2	Medium
51–60	24	12.8	Low
41–50	14	7.4	Low
31–40	9	4.8	Low
30 or less	6	3.2	Low
Total	188	100.0	

[a]The mean pretest score was 70.43 (SD = 17.64). Self–esteem scores ranged from 24 to 96.

Objective Three

Another objective of the study was to describe students at the freshman level on academic achievement as measured by first semester grade point averages. Three of the 218 students had missing information regarding grade point averages at the end of the first semester of college. The first semester grade point averages ranged from 0.0 to 4.0, with the mean grade point average being 2.71 (SD = 0.80).

Objective Four

Objective four of the study was to determine if a model existed explaining a significant portion of the variability in academic achievement, as measured by the first semester grade point average, among students at the freshman level from the following: (a) Self–esteem at the beginning of the semester; (b) Race; (c) Gender; (d) Place of residence during the first semester of college; and (e) Whether or not the student held membership in selected groups and organizations during the first semester of college.

In order to accomplish the objective the researchers used multiple regression analysis. In conducting the multiple regression analysis, the dependent variable was academic achievement as measured by the first semester grade point average. The independent variables included the self–esteem pretest score which was measured as a continuous variable on an interval scale. The other independent variables included race, place of residence during the first semester of college, and whether or not the student held membership in selected groups and organizations during the first semester of college enrollment. These independent variables were categorical in nature and had to be restructured as dichotomous variables in preparation for entry into the analysis. Gender was also a

categorical variable. However, since its natural occurrence is a dichotomy, it did not have to be restructured. Stepwise entry of variables was used due to the exploratory nature of the study. Variables that increased the explained variance by one percent or more were entered into the regression equation as long as the overall equation remained significant.

The categorical variable whether or not the student held membership in selected groups and organizations during the first semester of college enrollment was measured in 14 response categories. Of these 14 response categories, the three categories band, cheerleader, and university publication did not have adequate frequencies to include as a variable of investigation. In addition, the "*Other"* response was not included since the variety of responses created a variable with little continuity. The categorical response "*Departmental Student Organization"* was restructured to a dichotomous variable "*Member of a Departmental Student Organization"* or "*Not a Member of a Departmental Student Organization."* The dichotomous variable was then entered into the regression analysis as an independent variable. Similarly, the response "*Service Organization*," a response to the categorical variable regarding membership in organizations, was restructured as having membership in a service organization or not having membership in a service organization. Established as such it was used for entry into the analysis. Ten of the 14 categories that had 10 or more responses were restructured in this manner.

Finally, the categorical variable "*Place of Residence during the First Semester of College Enrollment"* which included four response categories was prepared for entry into the analysis. Again, each of the four response categories was established as a separate dichotomous variable.

For descriptive purposes, the bivariate correlations between the demographic characteristics used as independent variables and the academic achievement of students in the College of Agriculture at Louisiana State University during the first semester of college enrollment were explained. Three variables were found to be significantly correlated with academic achievement. The variable with the highest correlation was "*Departmental Student Organization"* (r = .20, p = .003). "*Service Organization"* (r = .18, p = .008) and "*Sports*" (r = -.14, p = .030) were also significantly correlated with academic achievement. Each independent variable was assessed for multicollinearity with other independent variables. No cases of excess multicollinearity were found in the data.

Table 3 presents the results of the multiple regression analysis utilizing academic achievement as the dependent variable. The variable which entered the regression model first was "*Departmental Student Organization*." Considered alone, this variable explained 3.9% of the variance in academic achievement of students in the College of Agriculture during the first semester of college enrollment.

Three additional variables explained an additional 3.8% of the variance in academic achievement. Those variables were "*Service Organization*," "*Sports*," and "*Pretest Self–Esteem Score*." The four variables which entered into the regression model explained 7.7% of the variance in academic achievement of students in the College of Agriculture at Louisiana State University during the first semester of college enrollment (See Table 3). The nature of the influence of the variables that entered the model was such that students who held membership in departmental student organizations tended to have higher grade point averages during the first semester of college enrollment. In addition, students who responded that they were members of service organizations and students with higher self–esteem scores at the pretest measurement also tended to have higher grade point averages during the first semester of college enrollment. Participation in sports, however, had a negative influence on academic achievement. The nature of the influence was such that students who participated in sports tended to have lower grade point averages.

Table 3
Multiple Regression Analysis of Academic Achievement as Measured by First Semester Grade Point Average and Selected Demographic Characteristics of Freshman Students in the College of Agriculture at Louisiana State University

ANOVA

Source of Variation	*df*	*MS*	*F*–ratio	*p*
Regression	4	2.100	3.782	.006
Residual	181	.555		
Total	185			

Model Summary

Model	*R* Cumulative	R^2	R^2 Change	*F* Change	*df*1	*df*2	Sig. *F* Change	β
Departmental Student Organization	.197	.039	.039	7.463	1	184	.007	.156
Service Organization	.239	.057	.018	3.547	1	183	.061	.123
Sports	.261	.068	.011	2.122	1	182	.147	-.116
Self–Esteem	.278	.077	.009	1.767	1	181	.185	.096

Conclusions and Recommendations

Based on the findings of the study, the researchers present the following conclusions and recommendations.

Conclusion One

Freshman students in the College of Agriculture had a moderate level of self–esteem.

This conclusion is consistent with the findings of Gaspard and Burnett (1991) when they studied the influence of self–esteem on academic achievement of ninth grade students in a rural high school. In their study the School Form of the Coopersmith Inventory was used. This instrument consisted of the subscales General self–esteem, Social–peers, Home–parents, and School–achievement. The largest group of students in the study had scores of moderate levels on all subscales of the instrument (General self–esteem–43.9%; Social–peers–46.9%; Home–parents–45.4%; School–achievement–50%; and Total–48.4%).

Conclusion Two

Participation in extracurricular activities had an influence on academic achievement of college freshmen.

This conclusion is consistent with the findings of Bettencourt, Charlton, Eubanks, Kernahan, and Fuller (1999) in which results of their study led them to suggest academic practitioners should recognize the capacity of group memberships to positively influence adjustment in the college context. This conclusion also follows the intent of Ball et al. (2001) who were interested in studying the influence of the involvement in the agricultural youth organizations 4–H and FFA on academic performance and retention of freshmen in the college of agriculture at the university involved in their research. The researchers determined participation in the agricultural youth organizations at the secondary level positively influenced academic achievement of freshman students. In addition, participation in agricultural youth organizations was found to have a significant association with retention for the sophomore year (Ball et al., 2001). These findings have implications regarding the present study of freshman students in the College of Agriculture. The researchers recommend that the College of Agriculture at Louisiana State University further investigate participation in agricultural student organizations on campus. Students could be surveyed to determine their extent of involvement in these organizations, including their goals for participation. Data gathered in such a study could be used by faculty advisors in further expansion of the

programs and in developing the future vision and goals for the organizations.

The low degree of influence of self–esteem on achievement evidenced in the regression model (R^2 Change = .009) and the lack of a significant correlation between self–esteem and academic achievement raise further implications regarding instrumentation and its use in the measurement of the variable self–esteem. The measurement of self–esteem with the use of the Adult Form of the Coopersmith Inventory used in the present study for individuals 16 years and above is a more global measurement. The Student Form of the Coopersmith Inventory is used with students 15 years and under and has subscales for the measurement of self–attitudes in the areas of personal interests, peers, parents, and school (Coopersmith, 1987). The researchers recommend the development of an instrument to measure self–attitudes regarding constructs specific to the college student. This instrument would serve the function of measuring self–esteem for this intermittent stage in the lives of many young people. It would measure self–esteem as it relates to those aspects of the college years which involve work, additional family responsibilities, and other experiences which become paramount to individuals in this setting. Other instruments have been used in the college setting. One such instrument, the Contingencies of Self–Worth Scale (CSW–65), measures the contingencies or criteria on which individuals base their worthiness (Crocker, 2002). Some of the contingencies measured are internal, while others are external and require validation from others. The instrument has been used to measure the pursuit of self–esteem rather than the level of self–esteem. The researchers recommend the development of an instrument that would include subscales that address the measurement of the level of self–esteem and its influence on variables in various domains of daily activities of college students including academics, social activities, and personal responsibilities such as work and family.

These findings also lead the researchers to recommend that the College of Agriculture at Louisiana State University and all colleges of agriculture further study those variables which do impact academic achievement. A qualitative study could be conducted in which personal interviews of first semester freshmen would be used to gather information regarding students' perceptions of and attitudes toward existing programs which facilitate adjustment to the college environment. Academic counselors could benefit from findings of such studies as they advise students regarding semester courses and plan and implement academic tutoring for those students in need of additional instructional opportunities and assistance. Such information as the student's involvement in work–related activities could be used in scheduling academic tutoring. Information could also be used in the development of mentoring programs involving upper class students as mentors and tutors within the College of Agriculture.

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