

The Impact of Participation on Freshmen Experiences in a College of Agriculture

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Abstract

The purpose of this study was twofold: (1) to investigate the characteristics of the participants who competed on a competitive team at the collegiate level and (2) to identify any differences between participants and non-participants of a competitive team at the collegiate level. The population of this study was traditional freshmen in the College of Agricultural Sciences and Natural Resources enrolled in the fall semester of 2007 at Texas Tech University. The sample consisted of two groups. The first group, participants, consisted of students who participated on a competitive team during their first year of college. The second group, non-participants, consisted of students who did not participate on a competitive team. A panel of academic experts used the Student Services Center to find criteria that could match non-participants to participants in an attempt to control for extraneous variables. The extraneous variables included gender, ACT score or equivalent, and academic major. The sample for this study consisted of (N=28) traditional freshmen students. Data was collected at the end of the year from the 28 students surveyed. The results showed that several variables were related to student perceptions and academic success. Further research is recommended to determine to what extent these variables are related. The results from this research can be used to model what impacts a freshman student's perceptions have on first-year academic success.

Introduction

According to Garton et al., 2002, most universities agonize about students' academic performance and continued enrollment. Mallinckrodt and Sedlacek (1987) found that, when compared to the other years in college, the freshman year has the worst retention rate. Why is this? Freshmen students enter the college environment during a crucial transition in their life. Responsibility shifts from parents to the individual student. As a result, students are trying to balance academics, adapt to a new location, and establish new friendships (Tinto, 1993; Noel et al., 1985; Chemers et al., 2001).

There are two outcomes resulting in how a freshman student handles the challenges and decisions during their first year at college including the completion of their first year of college or dropping out of school. According to Astin et al., (1987) students who dropout from public universities are more likely to say that they left college for academic reasons over any other. From the fall of 2006 to the fall of 2007, Texas Tech University's College of Agricultural Sciences and Natural Resources lost 20 freshmen which accounted for 12% of traditional freshmen students (Texas Tech University, 2007). According to Texas Tech (2007), out of those 20 students, 10 had a GPA lower than a 2.0. However, there were no reports explaining reasons for the other 10 students dropping out were found.

In order for students to adjust to college life successfully, Ting (1997) indicated that students need to take responsibility for one's behavior, improve leadership skills, cope with change, handle stress, practice time management, and have self discipline. Most students manage to transition successfully and thus are able to excel academically. However, there are students who are unable to manage this transition and leave college during or immediately after their freshman year (DeBerard et al., 2004).

In the past two decades researchers have tried to better understand and predict student retention and academic success. Vernon (1996) reported that factors besides academic performance impact student retention. When analyzing agriculture students, Dyer and Breja (1999) noted retention was not best predicted by the traditional admission criteria such as ACT and high school rank. What makes the difference in being a successful student or a dropout? Do some students come into college better prepared? Or, once students arrive at college do they get involved in extracurricular activities that help and teach them how to be successful in college? Researchers have tried to identify predictors of college success; including aptitude test scores (e.g. SAT and ACT) (Garton, et al., 2002; Mouw and Khanna, 1993), high school GPA (Ting and Robinson, 1998), emotional intelligence (Parker, 2002), and involvement (Astin, 1993).

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Ting and Robinson (1998) account high school GPA for largest variance when measuring first-year college GPA. However, Mouw and Khanna (1993) discounted pre-college variables such as high school GPA and college entrance as predictors of college success. This was due to the fact that even though the variables were highly correlated among each other, alone the variables have little impact on college success. Mouw and Khanna (1993) concluded from the results of the study that more research needs to be conducted to explain college GPA. Garton et al. (2002) suggested further research should be conducted in colleges of agriculture to establish valid and reliable predictors of student success within those colleges.

Many researchers have studied the relationship between involvement in extracurricular activities and academic success (Astin, 1999; Bauer and Liang, 2003). Astin (1999) described student involvement as physical and psychological energy that the student devotes to studying, spending time on campus, actively participating in student organizations, and frequently interacting with faculty members and other students. Bauer and Liang (2003) found that academic-related activities were positively and statistically significantly associated to a student's first year GPA.

Astin (1999) suggested that researchers should further examine the connection between particular forms of involvement and particular outcomes. Astin (1999) explained that it would be practical to establish whether particular student characteristics are significantly associated to different forms of involvement and whether a certain form of involvement generates different outcomes for different types of students. Another student benefit derived from participation is the strengthening of their perceptions of institutional and social support (Berger and Milem, 1999). Berger and Milem (1999) suggested that research be conducted to look at the relationship between student behavior and perceptions could aid in hope of explaining student outcomes.

Collectively, do students who choose to participate in competitive, extracurricular activities have a set of pre-determined characteristics that draw them into that type of activity? If so, what is the difference in academics and perceptions of the first year of college between students who chose to participate in competitive events than those who did not?

This study sought to better understand two components of college freshmen: (1) to investigate why freshman chose to participate in competitive extracurricular activities and (2) to determine if there was a difference in academic achievement and perceptions of the first year experience between students who chose to participate in competitive organizations and those who chose not to participate. The following research objectives were developed to outline and guide this study.

1. Describe participants and non-participants by academic major, ACT score or equivalent, emotional intelligence score, critical thinking ability, strengths, personality type, and high school size.

2. Describe the relationship between participation and first-year academic performance.

3. Examine relationships between participation and student perceptions of their first year of college experience.

Methods

The population of this study was traditional College of Agricultural Sciences and Natural Resources freshmen enrolled in the fall semester of 2007 at Texas Tech University. The sample consisted of two groups. The first group, participants, consisted of students who participated on a competitive team during their first year of college ($n = 15$). The second group consisted of students who did not participate on a competitive team. A panel of academic experts used the Student Services Center, which focuses on recruitment and retention of students within the college as well as student development for currently enrolled students, to find criteria that could match non-participants to participants in an attempt to control for extraneous variables. The extraneous variables to be controlled for included gender, ACT score or equivalent, and academic major. Fifteen non-participant students were identified to represent the control group. However, two students failed to provide data resulting in a comparison group of 13 non-participants. All students were traditional freshmen who entered the university in the fall of 2007 majoring in one of the agricultural degree programs within the college. The sample of this study consisted of ($N = 28$) traditional freshmen students.

The treatment for this study was considered to be participation on an intercollegiate, competitive, extracurricular team within the college. During the 2007-2008 academic year there were 15 freshmen on the wool judging team. While this sample is small, it does include all of the available students due to the nature of the study and its focus on freshman students and their first year experiences. At Texas Tech University, incoming freshman interested in a competitive, intercollegiate judging team are required to participate on the wool judging team their first year. Members of the team attended practice for three to four hours a day, two to three days each week. During these practices, students were taught technical evaluation skills associated with the event and were taught to orally present and defend their placing on classes they had judged. In addition, the fixed and frequent practice schedule allowed students to develop relationships with each other, set common goals, and have accountability to the team and all of its members.

Six data collection instruments were used to gather information for this study. The Watson-Glaser Critical Thinking Appraisal® was used to assess their

critical thinking ability. Emotional intelligence was measured using the Bar-On EQ-I. The Myers-Briggs Type Indicator® Form M was used to identify their personality type. The Gallup's StrengthsFinder was used to establish the individual talents of subjects. Researchers utilized the 2008 Your First College Year Survey to obtain the subject's perception of their first year in college. The 2008 instrument was used as data collection was completed at the end of the students' freshman year in May of 2008. Finally, a researcher-developed questionnaire was administered to collect information concerning high school and collegiate experiences. The researcher-developed instrument contained only descriptive items. Face and content validity was established by an expert panel of university faculty. Reliability was not a concern for this instrument, because questions solicited were factual and did not stipulate extensive thought or time from the student. Therefore reliability of the instrument was not vulnerable (Dillman, 2000). Each of the other instruments used are standardized and are commercially available. Subsequently, each provides evidence of validity and reliability deemed to be appropriate for use in this study.

For this study, data collection was completed on a single day to control for the threat of testing location as recommended by Fraenkel and Wallen (2006). There were six instruments administered to students. The Myers-Briggs Type Indicator Form M, and the Watson-Glaser Critical Thinking Assessment were completed by paper and pencil, while the First Year of College Experience Survey, Gallup's StrengthFinder, Bar-On EQ-I, and a researcher developed questionnaire concerning high school and collegiate extracurricular involvement were administered electronically.

The objectives of this study determined the data analysis procedures used. Data was analyzed by the Statistical Package for the Social Science (SPSS) version 16.0 for windows. For the study's first objective frequencies, percentages, means, and standard deviations were used for description and comparison of subject characteristics. The second objective sought to describe the relationship between participation and first year academic performance. Means, medians, standard deviations, ranges, Point-biserial correlation coefficients, and coefficients of determination were used to measure this objective. The third objective of this study was to examine the relationship between participation and the student's perceptions of their first year experience. To measure this objective, Point-biserial correlation coefficients were calculated. Davis' (1971) conventions were used to describe the magnitude of relationship of the correlation coefficients.

Results

Twenty-eight students completed the study. The majority of students (64.3%) majored in animal science followed by agricultural communications

majors (28.6%). The most popular high school size reported by the participant group was 5A (33.3%), which is the largest enrollment classification in Texas with more than 1,985 according to the 2006 – 2007 classification criteria provided by the University Interscholastic League (2010). The most popular high school enrollment size indicated by non-participants was 2A (38.5%). A 2A high school has 195-414 students enrolled (University Interscholastic League, 2010). The mean ACT score or equivalent for participants was 26.21 with a standard deviation of 3.76 compared to non-participants' mean score of 25.62 with a standard deviation of 3.84. The mean emotional intelligence score for participants was 100.07 with a standard deviation of 10.99 while non-participants' mean score was 98.62 with a standard deviation of 9.22. The Watson-Glaser Critical Thinking Assessment (WGTC) mean score of participants was 26.67 with a standard deviation of 5.96, and for non-participants the mean WGTC score was 26.23 with a standard deviation of 6.47.

Students took the Myers Briggs Type Indicator to determine their psychological type. Overall the dominant psychological preferences assessed by the MBTI® were Extraversion (71%), Sensing (71%), Thinking (64%), and Judging (57%). For all students surveyed the most frequently observed psychological types were ESTP (18%), ESTJ (14%), ISTJ (14%), and ESFP (11%). Less prominent psychological types were ENTP, ENFP, ISFP, ISFJ, INTP, and INTJ representing 3.6% of the population.

The MBTI has four preference scales (dichotomies) that measures how an individual's mind operates. The first scale, Extraversion-Introversion (E-I), measures how an individual directs their energy and attention. Sensing-Intuition (S-N), the second scale, assesses how one prefers to receive information. The third scale, Thinking-Feeling (T-F), evaluates how a person desires to make a decision. Judging-Perceiving (J-P), the fourth scale, appraises how an individual is orientated to the outer world.

In an analysis of the first dichotomy Extrovert/Introvert, the participant and non-participant groups were similar. In both cases, a majority of students (participants 67%, non-participants 77%) were determined to be extroverted. On the Sensing/Intuitive scale, a strong majority of participants (80%) had a preference toward Sensing while only 61% of non-participants preferred sensing.

On the Thinking/Feeling scale, 73% of the participant group preferred thinking and only 27% preferred feeling. In contrast, for non-participants, only 54% preferred thinking, 46% preferred feeling. The final scale, Judging/Perceiving revealed the largest difference between the two groups. Seventy-three percent of the participants were identified as judging, while only 38.5% of non-participants were identified as judging.

Students also took the Gallup's StrengthFinder Assessment. Of all students combined, the most

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common strengths were achiever (11.5%), competition (7.7%), and adaptability (6.2%). The most popular strengths of participants were competition (11.4%), achiever (8.6%), and restorative and discipline both at (5.7%). For non-participants the most frequent strengths recorded were achiever (15.0%), adaptability (8.3%), strategic (6.9%), and relator (6.9%).

The second objective sought to describe the relationship between participation and first-year academic performance. As displayed in Table 1, the mean for the participant's ($n = 15$) first-year academic performance (GPA) was 3.62, the median 3.77, the standard deviation .34. Their academic performance ranged from 2.92 to 4.0. The mean for the non-participant's ($n = 13$) first-year academic performance was 3.35, the median 3.34, the standard deviation .58. The range for non-participant's first year academic performance was 2.17 to 4.0. The Point-biserial correlation calculated to indicate the relationship between participation and academic performance was .29. The coefficient of determination (R^2) calculated was .08. According to Miller (1994), the coefficient of determination "describes the amount of variability in Y which is explained by the knowledge of X" (p. 6). Eight percent of the variance of first year academic performance could be explained by a student's participation.

Objective three was to examine relationships between participation and the student's perceptions of their first year of college experience. Correlations were calculated to compare the participant's and non-participant's perceptions of their first year of college (Table 2). The direction of the relationships was a function of how each group was coded (participants = 1, non-participants = 0). The relationship between participation and students' perceptions of hours spent per week with student clubs and groups was positive and moderate ($r_{pb} = .35$) according to Davis (1971) conventions. The relationship between participation and a student feeling like they were more than just another number on campus was positive and moderate ($r_{pb} = .44$). Finally, a negative moderate relationship ($r_{pb} = -.35$) was found between participation and the perception that students were able to balance their academics and extracurricular activities. Negligible relationships ($r_{pb} < .09$) were found between participation and critical thinking ability; problem solving skills; hours spent per week

socializing with friends, exercising, partying, working for pay off campus, volunteer work; and seeing oneself as part of the campus community.

Summary

Objective one of this study was to describe participants and non-participants through various characteristics. While students in both groups were similar on many characteristics, there was a difference in size of enrollment of high school. Students in the participant group more frequently reported coming from a large high school setting. Texas Tech University is a big campus and requires adjustment regardless of backgrounds. However, it may be that students from larger high schools more easily assimilate to activities on campus.

ACT or equivalent, emotional intelligence, and critical thinking ability scores were assessed and reviewed for each student. Overall, there were no practical differences found between participants and non-participants. This undoubtedly resulted from how researchers matched non-participants to participants on the criteria of ACT or equivalent scores. However, the similarities on critical thinking and emotional intelligence suggest that these variables may not be closely associated with the decision to participate in an extracurricular competitive event.

The results from the study indicate that freshmen students in the College of Agricultural Sciences and Natural Resources at Texas Tech University were more likely to prefer Extroversion than an Introversion. This could be a reflection of the culture at Texas Tech University, and how extroverts are attracted to the type of faculty and activities Texas Tech offers. When analyzing the psychological type of participants on the remaining scales almost three-fourths of the participants prefer Sensing, Thinking, and Judging. This demands attention, because the non-comparison group is mostly split among those three scales. It is not clear if students were attracted to participate in extracurricular activities because of their preferences, or if certain students were encouraged to participate more than others. Psychological assessments could prove useful to students who are not sure what organizations with which they want to be involved.

Strengths were also determined to help better understand the differences between participants and

non-participants. The most popular strengths found among students were achiever and competition. More than half of the participants had competition as one of their five strengths. Discipline was also a popular strength for participants when compared to non-participants.

Table 1. First-Year Academic Performance (GPA) of Freshman Students (N=28)

Participation	<i>n</i>	<i>M</i>	<i>Md</i>	<i>SD</i>	Range
Participants	15	3.62	3.77	.34	2.92-4.0
Non-Participants	13	3.35	3.34	.58	2.17-4.0

Table 2. Influence of Participation on First Year of College Perceptions (N=28)

Perception	r_{pb}	Magnitude
Time spent during the week in student clubs and groups	.35	Moderate
Feel like I am not just another number on this campus	.44	Moderate
Able to find a balance with academics and extracurricular	-.35	Moderate

Note. Participant = 1, non-participant = 0.

These findings suggest participating in intercollegiate judging activities may serve as an outlet for students with a competitive strength. Perhaps assessing student's strengths may allow universities to aid students in finding organizations or activities to get involved.

From the findings, participants are more likely to spend a greater number of hours per week being involved in a club or student group, than non-participants. Participants might feel they spend more hours per week involved in student groups and clubs, because their participation on the judging teams requires 10-20 hours of their time a week.

Participants also indicated they found it more challenging to balance academics and extracurricular activities. This could be influenced by the fact that participants missed consecutive days of school due to extracurricular activity involvement. Freshmen participants most likely have a hard time balancing academics and extracurricular activities, because the course load is tougher than their high school course load. In high school, they could balance their extracurricular activities and school work, but in college it becomes more of a challenge.

One, of the most interesting items found in this study, is that participants felt like they were more than just another number on the university campus. This can be attributed to the fact that as a participant on an intercollegiate judging team, they travel all over the nation to represent the university. This could provide the individual with a self-pride and their school. Another cause of this might be the interpersonal relationships established with faculty and students during the experience, which can promote the students' feeling of belonging.

When comparing participants to non-participants, academic performance was higher for participants. This was true even though students were matched on ACT or equivalent score. This could be explained by two things. First, participants miss class, and have to meet with their professors face-to-face to get their make-up work. Second, for the majority of participants one of their strengths was competition. Therefore, the students' competitiveness with the peers could influence their academic performance. Furthermore, in order to maintain eligibility on a judging team students have to maintain a pre-determined grade point average.

The Point-biserial correlation coefficient between participation and academic performance was .29. In addition, the coefficient of determination was .08. Eight percent of the variance of first year academic performance could be explained by a student's participation. One misconception, that this study challenges, is that grades decline when students participate in extracurricular events. Readers should use caution in generalizing the results from this study. They should only be used to describe the limited sample studied. Yet, these results should prove advantageous to teachers, advisors, and

administration who work with freshman student retention and success.

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