

Qualitative and Quantitative Methods Add Depth to Recruiting Study

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Abstract

Qualitative research methods were used to investigate the factors that influence prospective agriculture college students' choices of college and major at Virginia Tech and the interventions Virginia Tech's College of Agriculture and Life Sciences (CALS) might employ to encourage prospective students to consider their opportunities in agriculture and the life sciences. Results indicated that family members and the reputation of the college were important factors in students' college choices and that Virginia Tech CALS should be more visible in the high schools and communities from which prospective students come and should take an active role in informing the public about contemporary agriculture.

Introduction

Since the mid 1970s, undergraduate enrollments in colleges of agriculture in the United States have decreased drastically. Many factors have influenced this trend. Pesca-

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with him/her would be beneficial to the student. Figure 4 illustrates the retention rates of respondents based on the number of visits per semester with their advisor. Those who visited their advisor 4 or more times per semester were retained at a rate of 83.3%.

Conclusions and Recommendations

Academic retention of college of agriculture and home economic students will become increasingly important in the 1990's as universities face a decline in first-time enrollments. No difference was found in the retention rates of those who took a college prep high school curriculum (67.9%) and those who took Agricultural Education classes (67.6%). Respondents from towns of less than 2500 and from high schools with enrollments of less than 100 students also had higher retention rates.

Active participation of on-campus clubs and organizations also appears to increase the retention rates of agriculture and home economic students. Advisors need to encourage students to take a full credit load and become involved

in various campus activities. Store and Harter-Dennis (1987) suggested that the "decline can be attributed to two areas of concern: 1) a decline in the traditional college-age population, and 2) the failure of agriculture to compete with other professions in attracting students" (p. 22).

Obviously, little can be done about the declining number of college-age students; however, there should be ways that the colleges of agriculture can increase their share of the prospective college students. In an invited paper at the 32nd Annual National Association of Colleges and Teachers of Agriculture (NACTA) Conference, R. J. Hildreth (1986), Managing Director of the Farm Foundation, said, "If Colleges of Agriculture are going to provide the human capital desired by agribusiness firms, it is important to recruit the brightest and the best, as well as adjust their programs of education" (p. 12).

Coulter, Goecker, and Stanton (1990) have projected nearly an eleven percent annual shortage of college of agriculture graduates to meet the employment demands through 1995. Their report projects large career opportunities in agricultural marketing, merchandising, and sales; agricultural sciences, engineering, and related areas; and agricultural management and finance. These projections have been

in various campus activities.

Retention rates increased as overall level of satisfaction with one's first advisor increased. Students were also retained at higher rates as student made more frequent visits to their advisor. It is recommended that greater emphasis be put on the advising program within the CAHE. Outstanding advisors need to be recognized within individual departments of the CAHE and ineffective advisors need to be given instruction to help improve their advising skills.

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verified by employers representing agricultural firms who recruit new employees on the Virginia Tech campus. Personnel officers from many ag-related companies and organizations are experiencing difficulties finding qualified college graduates to fill their employment needs.

Undergraduate enrollment in the College of Agriculture and Life Sciences (CALs) at Virginia Tech has followed the nation-wide trend. In 1977, the undergraduate enrollment in CALs peaked with 2,374 students. By 1988, the number of undergraduates enrolled in CALs had dropped to 1,148 students. This represents a 51.6 percent decrease in enrollment in twelve years. Between the 1988 and 1990 academic years, the college enrollment increased 11.7 percent and another increase is anticipated for the 1991 academic year.

Quantitative research studies related to undergraduate agriculture student recruitment have been reported. Schuster and Constantino (1986) surveyed agriculture students at Virginia Tech. They found that the important factors for choosing the major were job opportunities, career interests, parents, and printed materials from the university and college. Alumni, high school teachers, extension agents, and representatives from the university were reported as factors that were not influential in students' choices of major.

Reese, Burson, Gilster, Kinder, Owen, and Brink (1987) reported that agriculture students at the University of Nebraska-Lincoln rated interest in the area, perceived aptitude to succeed, and potential employment opportunities as the most influential factors toward their choices of major. Factors that received low importance ratings by the students were college staff; college clubs; college programs, brochures, or exhibits; and county extension agents. These students perceived parents, previous or current college students, and membership in 4-H or FFA as moderately influential factors in their major choices.

Riesenberg (1987) found in a survey of new agriculture and home economics students at the University of Idaho that reputation of the college, finances, advising functions, and academic programs offered were factors students rated high in importance in selecting a college or university to attend. He also reported that students rated parental preference and high school counselor's rating as low in importance in selecting a college or university to attend.

Boone, Newcomb, Reisch, and Warmbrod (1989) reported that high-ability non-traditional agriculture students at The Ohio State University rated family and high school guidance counselors as primary sources of information about the college and university. Additionally, they found that parents attend campus activities, such as career day, with high-ability, non-traditional agriculture students.

Quantitative studies, such as the ones cited above, have provided some insight toward attracting students to major in the agricultural sciences. However, qualitative methods, in conjunction with quantitative methods, may be used to arrive at satisfactory answers for solving problems (Bogdan & Bilken, 1982). Additionally, triangulation, using multiple data sources on a single research question (Marshall &

Rossmann, 1989), can be used to corroborate, elaborate, or illuminate the research in question (Rossmann & Wilson, 1985) and enhance the generalizability of the results.

Current students are the key to understanding how to improve the recruiting efforts of colleges of agriculture. In the investigation reported in this paper, the qualitative methods of in-depth interviews and focus group discussions were used with current Virginia Tech CALs students to collect data to identify what CALs enrollment managers can do to make prospective students aware of the opportunities available to college graduates in the agricultural and life sciences and, thus, attract more students to the College of Agriculture and Life Sciences.

McCracken (1988) contended that a major difference between quantitative and qualitative studies is the way analytic categories are treated. In each of the quantitative studies reported previously in this paper, the analytic categories were formed a priori. The analytic categories in the qualitative study reported in this paper emerged during the process of the research. Results of this qualitative study, along with previous findings from quantitative studies, are used to recommend recruitment strategies that may prove beneficial in attracting more students to major in agriculture and the life sciences at Virginia Tech.

Purpose and Objectives

The purpose of this study was to identify elements from the college atmosphere that influence students' decisions to attend college and select majors. Guba (1978) identified theory generation as a characteristic of qualitative research. The researchers expected this investigation to suggest applied theories to explain how students choose their college and major and what interventions colleges of agriculture should employ to encourage more students to choose agriculture and life sciences related majors.

The specific research objectives were: 1) to discover the significant life events that lead students to their choice of college and major, and 2) to discover interventions the Virginia Tech College of Agriculture and Life Sciences should do to encourage prospective college students to consider their career opportunities in agriculture and the life sciences.

Procedures

Data were collected via in-depth interviews and focus group discussions to answer the research questions. Morgan (1988) contended that focus groups and individual interviews may be linked effectively as a data collection technique. One way to triangulate data from focus groups and interviews is to conduct focus groups after conducting interviews. Using this procedure, viewpoints that emerge from the interviews may be further explored in the focus groups.

The student participants for the research came from two sources. Members of the Ag College Council, which consists of representatives from all curriculum clubs in CALs, were asked to participate. Additionally, academic advisors in all departments were asked to suggest articulate students who would be willing to participate. A total of 23 students

agreed to participate in the research.

In-depth interviews were conducted with eight students, five female and three male. Two students had transferred to Virginia Tech from other universities; six had entered Virginia Tech CALS as freshmen. Fifteen students participated in three focus groups, ten female and five male. Morgan (1988) recommended using homogeneous groups for the focus group discussions. Of the three groups used in this research, two groups consisted of upperclass students and one group consisted of new freshmen. The students in the focus groups had all entered Virginia Tech as freshmen. Most academic departments in CALS were represented by these students.

The interviews averaged around twenty minutes in length and were recorded on audio tape. The focus group discussions lasted just under one hour and were video and audio taped. A framework of questions for the interviews and focus groups was written in advance; however, interviewers and discussion leaders were not compelled to follow the framework exactly. The interviews and group discussions followed the natural flow of the conversation.

The tapes from the interviews and focus groups were transcribed. To analyze the data, the researchers looked for common themes that emerged from the data. Regarding analysis of interview data, McCracken (1988) wrote, "The object of analysis is to determine the categories, relationships, and assumptions that informs the respondent's view of the world in general and the topic in particular" (p. 42). Morgan (1988) suggested two basic approaches to analyze qualitative data. The ethnographic approach centers on direct quotations from participants; the content analysis approach involves coding data and producing numerical summaries of the results. The ethnographic analytical approach was employed in this study. Important themes were synthesized from all of the data.

The following research questions were addressed in the interviews and focus groups: 1) What significant events in your life led to your college and major choice? and 2) What should the Virginia Tech College of Agriculture and Life Sciences do to attract students to academic programs in agriculture and the life sciences?

Results and Findings

Results of the qualitative analysis of the data are reported in this section of the paper. As specific themes are presented, typical quotes in support of the themes from the student participants are provided verbatim. Characteristics of the responding students are enclosed in parentheses following each quote.

The first objective regarded discovering the significant events that led to the students' choices to attend Virginia Tech and major in an agricultural related area. Three prominent themes emerged from the responses.

The first theme was related to parents or other family members. The father was mentioned quite often. Typical responses follow:

"My father was familiar with Tech and I checked into it a little bit and I transferred here last fall." (up-

perclass male in Dairy Science)

"My step-dad went here so he sort of encouraged me..." (freshman female in Food Science and Technology)

"My mom and dad seemed to like Tech so I applied..." (freshman female in Crop and Soil Environmental Science)

Family members were mentioned often in the discussions of factors that influenced students to attend Tech; however, only three of the students indicated that a family member had attended Virginia Tech and majored in an ag-related area. It seemed that the family influence was helpful in getting the students to Virginia Tech but not necessarily in the students' choices of major at Tech.

The second theme involved other significant individuals such as guidance counselors, alumni, and CALS professors. The exact names of professors and administrators were repeated throughout the interviews. One freshman expressed this theme with these words:

"...I talked to Dr. White [associate dean for resident instruction], I got to know him really well and he was just really down to earth. He was just really nice and then I came a few more times and I talked to Dr. Beal [Animal Science academic advisor] and I didn't feel like he was putting himself above me...it made me feel at home so when I came here I was really, really comfortable with what I was doing, the fact that I was going to be in Animal Science." (freshman female in Animal Science)

A third theme that emerged in responses to the first question was the strength and reputation of the academic programs in the Virginia Tech College of Agriculture and Life Sciences. The reputations of the individual departments and the professors were mentioned in all of the focus groups and in most of the in-depth interviews. Two students' responses were:

"...the Ag Econ department here is one of the best in the nation. So I think the quality of the departments and the other opportunities that were available is what really had a big impact on my decision to come to Tech." (upperclass female in Agricultural Economics)

"It seems like every time I pick up a copy of the Hoard's Dairyman there are articles in there written by professors here at Tech." (freshman female in Dairy Science)

The second objective was related to what the students thought Virginia Tech CALS should do to attract students to ag-related majors. Responses centered on the idea that CALS is not visible in the high schools or in the communities in which the students reside.

"Visibility is a real important thing. A lot of schools, you had to know they were there, and then look them up in the college books before you ever found any information. I don't see this as effective." (freshman female in Pre-veterinary Medicine)

"...I had no clue about Virginia Tech...and I only live three hours from here and so I mean Tech didn't

reach us -- at all." (freshman female in Animal Science)

The students who had urban backgrounds and attended schools without an agriculture program or FFA chapter said they heard nothing about agriculture in their high school -- not in terms of career opportunities nor in terms of subject matter in classes such as biology, chemistry, and other life sciences. Even students who were enrolled in secondary vocational agriculture and were members of FFA said they did not see any evidence of the existence of Virginia Tech CALS in their high schools.

A second theme from the second objective was related to communicating agriculture's message to high school students and the public in general. A profound comment was:

"The only experience or exposure they will have to forestry is, this is really embarrassing to say, is Smokey the Bear. How can we expect people to be interested in things they've never heard about?" (upperclass male in Forestry)

The students agreed that a perception problem about agriculture exists. There was consensus that people in general do not know much about agriculture and that what the general public does know may not be accurate.

"When people ask me my major, I will say Ag Engineering or I won't put the agriculture in it and they say what specialty and I will say agriculture and they go, Oh, I hate that." (upperclass male in Agricultural Engineering)

Conclusions and Recommendations

A review of the findings from this investigation leads to the following conclusions:

1. Students' choice of college is influenced by some significant individual such as a family member (most likely a parent) or someone associated with the students' high school or potential college choice.

Some previous research has indicated that family members are not influential toward students' college choice (Riesenberg, 1987). However, other studies have indicated a moderate to strong family influence (Schuster & Constantino, 1986; Reese, Burson, Gilster, Kinder, Owen, & Brink, 1987). Additionally, the Boone, Newcomb, Reisch, and Warmbrod (1989) study indicated a strong family influence especially for high-ability, non-traditional agriculture students which corroborates the results found in the current qualitative study. The students in Virginia Tech CALS are high-ability students. The average CALS student at Virginia Tech has a combined SAT score of 1070 and comes from the top 14 percent of his/her high school graduating class. Therefore, the researchers conclude that family influence is of high importance for the prospective students in the Virginia Tech CALS' target market.

2. Students' choice of academic major is influenced by the quality and reputation of the academic programs.

This conclusion is supported by the Reisenberg (1987) study which found reputation of the college, advising functions, and academic programs offered to be

influential in students' choices of college and major.

3. The Virginia Tech College of Agriculture and Life Sciences is not visible in the high schools from which prospective students come.
4. High school students and the general public may not have an accurate understanding of contemporary agriculture.

Considering these conclusions, the researchers submit the following recommendations:

1. The college recruitment plan should be carefully reviewed and ways to increase the involvement of parents and other family members in the recruitment program should be sought. Agricultural leaders in the local communities may be used as a vehicle to encourage prospective students through their parents or other adult relatives.
2. The college should give more attention to publicizing the outstanding achievements of the college and academic departments such as the activities and awards won by student curriculum clubs and judging teams. Prospective students seem to be influenced by success stories. They need to be able to envision themselves as successful students in academic programs with well-known, positive reputations.
3. The college should make an extra effort to be visible in the high schools and communities from which CALS prospective students come. Recruitment activities should be planned to increase prospective students' awareness of the College of Agriculture and Life Sciences at Virginia Tech.
4. The college should make an effort to inform prospective students and the general public of what contemporary agriculture is and its impact on the social and economic systems in the United States. Activities such as a Speakers Bureau and developing curriculum materials to incorporate agricultural related topics into the public school math and science curricula should be explored.

The researchers recognize that a successful recruitment plan for one college of agriculture may not necessarily be successful in another college of agriculture. Therefore, the researchers suggest that enrollment managers from other colleges of agriculture talk to their current students to discover the recruitment activities that led to their enrollment and adjust the college recruitment plans accordingly.

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