

Impact of a University Summer Academy Program on Incoming College of Agriculture and Life Sciences (CALs) Students' Choice of Major

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Abstract

The summer academy is designed for accepted first-year or transfer students who want to get an early start on their academic career. In 2013, the summer academy had 25 different tracks, which consisted of two discipline-specific paired classes. This study focused on students enrolled in the tracks that were within the College of Agriculture and Life Sciences (CALs). Objectives of this study were to (1) examine the variables influencing the students' participation in the summer academy program, (2) examine the variables influencing students' choice of CALs specific courses and (3) determine if the summer classes impacted their choice of intended major. The CALs specific classes had a perceived influence on intended major for 28% of participants. Focus groups examined student motivations and the variables influencing choice of academic major to further elaborate survey findings. Focus group results indicated that early academic experiences may have an influence on future academic goals.

Introduction

Every summer a new group of high school seniors will graduate and begin preparations for college, but not all are fully prepared for this new environment. Being "college ready" includes not only academics, but also the ability to succeed in a college setting without remediation (Kallison and Stader, 2012). According to Kallison and Stader (2012) only 25% of students who took the ACT in 2011 met or surpassed the benchmarks for English, math, reading and science. In order for students to achieve college readiness, many high schools, community colleges and universities have implemented summer bridge programs in order to address the needs of the incoming group of students.

In order to help transition to college, summer bridge programs have been implemented in high schools, colleges and universities across the nation (Anastasi, 2007; Garcia and Paz, 2009; Kallison and Stader, 2012; Nartgun et al., 2012; Walpole et al., 2008; White, 1999). Examples of summer opportunities include the Department of Education's Upward Bound and GEAR UP programs as well as independent programs found on college campuses (U.S. Department of Education, 2012, 2013). The goal of these programs is to increase student preparedness for college, either by working with students during the summer before college, or by working with students during their high school years. According to Dainow (2001), attendance for summer programs is on the rise in most community colleges and many universities. Most programs utilize a six to eight-week program model in order to address the needs of the students and prepare them for the next chapter in their educational careers (Garcia and Paz, 2009; Kallison and Stader, 2012; Maggio et al., 2005; Walpole et al., 2008).

Most summer bridge programs are intended for first-generation college students or those from underrepresented minorities. Many schools offer summer courses for credit, but few schools in the country have programs specifically designed to allow incoming first-year students or transfer students to start their education before the fall semester. The summer academy at Virginia Tech began in 2012 and was developed from the Pennsylvania State Learning Edge Academic Program (LEAP) model (Pennsylvania State University, 2014). The purpose of the summer academy was to help ease the transition of students from high school to a large undergraduate university by allowing time for them to become famil-

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lar with campus life, academic expectations and new people. Students took two paired courses that began during the first week of July and concluded mid-August. The courses were selected from a list of “tracks” that are college or program specific, fulfill graduation requirements and form a solid academic foundation at the university (Virginia Tech, 2014). The courses were selected to be representative of both general courses and discipline specific courses that an incoming first-year student would experience. Each track was limited to 24 students and included a peer mentor to help with academic, personal, or campus problems. Students attended orientation and various other workshops, including time management, study skills and test taking strategies as part of the program. Participants also attended college introduction camp, which offered an immersive off-campus experience for students to form relationships and learn about the university. During the summer of 2013, the summer academy offered 25 different tracks for an estimated 250 students across various disciplines and colleges.

Purpose of Study

The summer academy was designed for incoming, accepted first year or transfer students who wanted to begin their academic career at the university early. Because of the amount of time, money and resources that CALS commits to having courses taught in the summer academy, the researchers wanted to know why students were motivated to come to summer academy, especially those that were enrolled in CALS classes. The researchers also wanted to know why the students chose a particular track and what courses they would recommend to add to the program. Specific objectives for the study were to (1) examine the factors influencing the students’ participation in the summer academy program, (2) examine the factors influencing students’ choice of CALS courses and (3) determine if the classes within their track impacted their choice of intended major.

Materials and Methods

This study utilized a sequential explanatory mixed methods design (Creswell and Plano Clark, 2011). This research method was employed to first examine possible reasons students attended the summer academy and qualitative questions were subsequently built upon the quantitative data results. This design allowed for further understanding of the quantitative results (Creswell and Plano Clark, 2011). The researchers designed a survey instrument, as no instrument related to the particular experiences of students within the summer academy existed. The instrument was pilot tested to a small group of students within CALS to determine validity. An email with an explanation of the study and an invitation to participate was distributed to all 42 participants in the CALS tracks of the summer academy. The surveys were sent out and after three follow-up emails, 21 were returned, of which three students were under the age of 18 and were excluded. Of the 18 viable surveys, five

participants were male and 13 were female. Examples of survey questions included: “Why did you choose to enroll in the summer academy” with a list of possible options including “Other” and “Why did you choose this particular track” with a list of possible options and demographic information. Survey data was collected via Qualtrics.com and analyzed using Excel. The data collected from the survey was used as the primary basis for focus group protocol questions.

Focus group participation was based on convenience sampling utilizing all 18 participants that responded to the survey. The potential participants were invited to attend one of three scheduled focus groups. Participants were contacted via an email invitation letter explaining the voluntary participation as well as the format and purpose of the focus groups. Five students agreed to participate, representing 27% of total survey respondents. Of these five participants, two participants were male and three were female. All participants were given pseudonyms and some identifying details were altered to maintain confidentiality. The focus groups represented a diverse population of students including one transfer student from a community college, one student from a homeschooling background and one international student for whom the summer academy was their first experience in the United States. Focus group questions were designed as expansions of the survey questions. For example, a survey question asked about motivations to attend the summer academy and allowed students to select multiple options. The related focus group question asked students their primary influential factor to attend and to describe this factor in detail. Another example focus group question investigated how the courses taken in the summer academy influenced the students’ decisions on a major. This allowed for in-depth description of the relationship between the summer coursework and the students’ selection of a major. Focus group data was recorded and transcribed. Researchers then coded and analyzed the data for themes using a comparative method involving joint coding (Denzin and Lincoln, 2005; Rossman and Rallis, 2012). The Institutional Review Board (IRB) required both survey and focus group protocol. The chairperson of the university’s IRB committee approved the research and project protocols.

Results and Discussion

Survey

At the conclusion of the summer program, 42 students were asked to participate in an online survey and 21 responded, a response rate of 50%. Of those who responded, 72% of respondents were female, 28% were male and 28% were transfer students coming from a community college experience. Results indicated the factors motivating students to attend the summer academy included: the opportunity to begin their college experience early (56%), family encouragement (50%), participation in smaller classes (33%) and lessening first semester workload (28%).

Researchers examined the impact of the coursework within summer academy on students' decision of their college major (Figure 1). The CALS specific classes had an influence on intended major for 28% of participants. The students were all enrolled in courses within CALS. Two students reported that their experience in the summer academy impacted their decision to change their major and three students reported that the summer academy helped them decide to not major in a certain class they took during their time in the program. For ten students (47%), the summer academy did not change their major; however, this could mean that their major choice was confirmed by their experience within the summer academy.

Survey items provided some insight into why students chose to attend the summer academy; however, in order to better understand their decisions, the researchers developed focus group questions to investigate this decision-making process. Researchers also examined the data regarding decision of track and decision of major. Focus group questions were designed to better understand the survey results that indicated an impact of the summer courses on the students major and to explore the possibility that the summer academy could confirm a student's decision to major in a particular curriculum area.

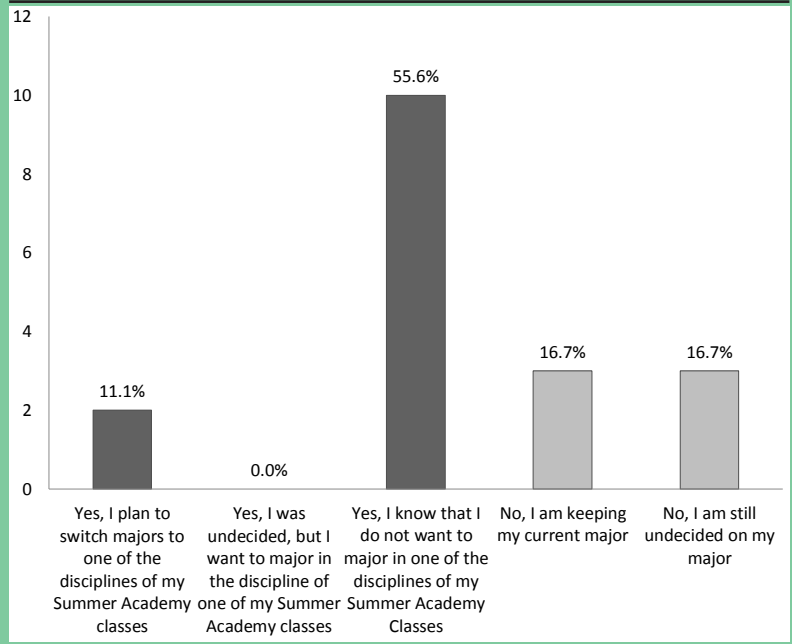
Focus Groups

The researchers followed a comparative method utilizing joint coding and analysis (Denzin and Lincoln, 2005; Rossman and Rallis, 2012). Similar comments were coded and categories interpreted in order to make meaning of the described phenomena (Rossman and Rallis, 2012). Seven categories resulted from the analysis of the participants' experiences of the summer academy. These categories were used as a framework to guide the organization of the findings. Although categories are discussed separately, they were not experienced in isolation of one another.

Family/personal reasons have influence of decision to attend summer academy

Many students felt a deciding factor in attending the summer academy was their parents. In some cases, the parent or guardian gave the student little to no choice in attendance. In other cases, students were encouraged, but not mandated to attend. There were some instances when the student brought the program to the attention of their parents. Parents also played a large role in deciding what track to take and their potential major. Parental influence weighed heavily on students' decisions in both attending the summer academy program and also in their selection of coursework and major. This finding aligns with research by Gonzalez-DeHass et al. (2005) who found that parental influence weighs on student motivation in regard to college and major selection.

Figure 1: Student response to survey question "Did your summer academy classes have any influence on your intended major?" (n=18). Highlighted columns indicate influence on major choice.



International and transfer students discussed that guaranteed housing and learning cultural differences of campus environment also had an influencing factor in attending the summer academy. Overall, findings indicated that there are both academic and personal circumstances that motivated students to attend the summer academy.

Students determine summer academy track based on academic needs and desires

For many students, the decision to take one track over another within the summer academy was a multifaceted process. Research suggests that a major disadvantage of summer courses is the limited subject choice. White (1999) found that 63% of students did not like the limited subject choice available during the summer. Some students in the summer academy were unable to find a track that satisfied them completely and others selected the track that aligned with their major choice. Students chose their particular track based on interest, the ability to fulfill academic requirements, or to become acclimated to a rigorous academic schedule. The courses comprising a track were not interchangeable; therefore, students had to determine which course or courses were the most important to take in an abbreviated summer session.

Summer academy builds sense of community between peers and professors through small class/lab size and "relaxed" environment

The summer academy allowed students to connect through a series of activities, classes and residential living experiences with their peers and professors. The students acknowledged that the small classroom environment, atypical for a university of this size, allowed for a more relaxed environment, similar to a high school

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or community college setting. Since classes were small, students were able to experience more in depth interaction with peers and professors. Normal laboratory classes at a large university are 20-30 students. Students explained that the 24 student capacity on enrollment in summer classes was beneficial, since it allowed for more repetitions and time allotted for each experiment. According to White (1999), most students feel the educational environment of summer classes is advantageous. Summer classes offer students the unique ability to work in smaller class sizes, which can encourage a more focused learning environment where the emphasis is on more professor-student interactions and in-depth conversations (Anastasi, 2007; Nartgun et al., 2012). Many students enjoy the comfortable, relaxed atmosphere of summer classes (White, 1999).

Summer academy faculty members are encouraged to engage with students outside the classroom. Some professors chose to take students on hikes or bike rides through the community while encouraging an educational dialogue relevant to the course content. Students expressed that these opportunities allowed them to connect with the community and become familiar with university surroundings. Engaging in these conversations with their professors enhanced their summer academy experience both academically and professionally.

Though not all classes and tracks of the summer academy had laboratory experiences, the participants that had this component in their schedule enjoyed their experience. Students reported that the small class sizes allowed for more intimate interaction with laboratory exercises, more repetitions and more time for each experiment.

The small class sizes in the summer academy allowed students to develop close personal relationship with peers and professors and allowed for a more comfortable and relaxed educational environment. The summer academy brought students together from all disciplines to live and work together. The personal relationships that resulted from the classroom activities, professorial interactions and team building activities last throughout their time at the university, making it a valuable aspect to the summer academy program.

Challenges of summer academy: Compressed academic schedule and repetitive introductory success courses

Summer academy classes were five weeks in length. Before beginning course work, students took introductory college success courses on a number of topics including test taking skills and time management. Students who participated in this study found these classes lacking and commented that the classes taught many topics that they had previously experienced in high school. Transfer students in particular reported that they felt these classes were unnecessary as they had already completed a transition phase and were accustomed to the demands of collegiate level academics.

Participants explained that classes offered during summer academy were difficult even for those that had previous experience in the discipline. The compressed schedule combined with weekly quizzes and examinations was very demanding for students. Research conducted by Al-Dosary and Raziuddin (2001) and White (1999) suggest that rapid class pace and the consolidation of material into a compressed time frame are disadvantages of summer courses. The fast pace and close intervals of classes may not be suitable for courses that require development of skills over a long period of time (Al-Dosary and Raziuddin, 2001). Students (60%) and professors (66%) say the shorter time frame with the same amount of material as a 15-week class negatively affects learning (Al-Dosary and Raziuddin, 2001). Though in class time was the same between a normal 15-week course and a summer course, students felt the demanding academic schedule was a disadvantage of the summer academy.

College introduction camp and peer mentors enhance summer experience: Encourage sense of community and building relationships

The transition to college can be made smoother by engaging in group activities, interacting with peer mentors and building relationships. Socially, summer classes, especially in a college bridge or transition program, can bring peers together with similar adjustment anxieties (Garcia and Paz, 2009). Allowing peers with similar concerns or anxieties to come together in a comfortable, unique learning atmosphere can help in forming a foundation for their academic or social support network (Garcia and Paz, 2009).

College introduction camp was a mandatory portion of the summer academy experience. College introduction camp was also available to other incoming students for a fee, but the sessions were scheduled separately from the summer academy students' experience. The camp promoted bonding and unity within the incoming student population. It was a unique experience to fully integrate students into the culture and traditions of the university. College introduction camp allowed for students with similar adjustment anxieties to become familiar and acquainted with one another in a non-threatening environment. Many students reported that college introduction camp was a positive experience, which allowed them to form lasting relationships with peers. Participants indicated that some of their best friends were made during this three-day experience.

Peer mentors, who are upper class students, served as student assistants during the entire summer academy and also helped with the transition to college life. Peer mentors organized activities, counseled students and promoted a sense of community within the program participants. Participants described that some of their most memorable times at summer academy were the activities directed by the peer mentors.

Through college introduction camp and peer mentor leadership, students formed a solid support network

before the fall semester began. Research suggests that having this early support, both socially and academically, can encourage retention, especially among first generation or underrepresented students (Garcia and Paz, 2009). Social interaction can lead to increased self-esteem, interest in intellectual matters and higher education aspirations (Maggio et al., 2005). These experiences helped to build lasting memories and a sense of community.

Summer academy classes helped ease transition to the university name: Lessened course load, eliminated prerequisites and offered a sound GPA buffer

Students chose to attend the summer academy for a variety of reasons. Both transfer and regular first-year students noted that starting their time at the university with a good grade point average and a lighter fall course schedule would lower their academic anxiety. Research suggests that summer classes can ease the course load the following semester, get back on track, or compensate for failures during previous academic terms (Al-Dosary and Raziuddin, 2001; Nartgun et al., 2012; Dainow, 2001). Participants described the difficulties of maintaining a good grade point average during the fall. Because they had performed well during the summer courses, their grade point average at the conclusion of their first year was adequate in their opinion. The lighter class load during the fall semester can be beneficial for the sometimes tough transitional challenges that incoming first-year students encounter.

Some participants described the importance of the summer academy classes in eliminating prerequisites that could not be eliminated by advanced placement (AP) credits, thus allowing them to double major. This elimination of prerequisites can allow students to pursue major or minor classes more quickly. Prerequisites, especially at a large undergraduate institution, that may be difficult to enroll in during regular semesters can also be fulfilled during the summer, allowing students to stay on track and graduate on time (White, 1999). A study conducted by White (1999) found that 64% of students were motivated to take summer courses in order to progress towards their degree.

Summer academy track has lasting effect on academic and personal choices in college

The courses that students took in the summer academy program are based on track selections. These tracks allowed students to get exposure to classes within a major so that they could begin to consider possible academic pursuits. For this study, the main focus was to determine if the summer academy experience had an impact on students' choices of major selection. For some students, the summer academy had an indirect impact on their intended major choice by allowing them to determine if the major was right for them. For other students, their experience confirmed their decision to continue with the major that they were already considering.

One student, Laura, suggested that taking the summer academy courses allowed her to double major. Without these early courses, she would not have been able to complete a double major without taking additional time to finish her degree(s). Other participants garnered an unknown interest in the courses taken during the summer academy. For other students, the summer academy experience confirmed their decision to stay within their major and pursue their career goals.

Laura, who was also a transfer student, found the summer academy experience helpful in determining a professor to advise her. As she was further along in her academic career than the incoming freshmen, this gave her an advantage in continuing her progression to completing her degree. Giving students early guidance can ultimately impact their future career and have benefits for society as well as for the employer (White, 1999). Overall, students within the focus group indicated that the summer academy had a positive impact on their choice of college major, either by confirming their intended major or by introducing new majors and minors.

Implications

The early classes that an incoming first-year student has upon entering college may have an impact on their future academic choices. At a large university with many different academic pursuits available, new possibilities or interests may arise as a result of early collegiate classes. Students chose to come to a summer bridge program like the summer academy to get a head start on college as indicated by the survey results. White (1999) found that 64% of students were motivated to attend summer classes in order to progress towards their degree and Al-Dosary and Raziuddin (2001) found that summer classes can ease course load the following semesters, which was mentioned by the focus group participants. However, with paired, discipline-specific classes, participants found an interest in other academic areas that were unfamiliar to them as a result of the summer academy. This may suggest that students currently not enrolled in a discipline specific major may benefit from taking a wide variety of classes early in their college career with the hope of finding their academic passion.

Programs like the summer academy also allowed students to form solid relationships with peers and professors even before the fall semester began. Participants noted the importance of these relationships and the ease of transition to college. Garcia and Paz (2009) noted that a summer program can bring together peers with similar adjustment anxieties, which can help them form relationships early on in their college experience. Small classes offered a similar environment to high school, but with the rigor of a college level class. The personal interaction with professors can help students feel more comfortable and become acquainted with a new environment. This result is confirmed by Anastasi (2007) and Nartgun et al. (2012) who found that

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the small class sizes allow for more student-professor interactions and in-depth conversations. Having these familiarities from high school can ease the transition to a large university before the hectic fall semester.

Summary

Summer bridge programs like the summer academy seem to have a positive impact on incoming first-year students and transfer students. Students can become acquainted with a large university before the general student population returns to campus while possibly eliminating some prerequisite classes in order to double major. The small class sizes coupled with living arrangements allow for personal interaction with peers and professors. Results indicate that classes that an incoming first-year or transfer student may have an impact on future academic choices such as major, minor, or class selection. Future research is currently ongoing and will focus on “graduates” of the summer academy program to track their grade point averages, class and major/minor selections as well as general collegiate success to see if the summer academy had a long lasting effect on students.

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