

An Ex-Post Facto Study of First Generation Students

by

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(ABSTRACT)

The degree of access to American higher education has changed over the years. During the 1980s and 1990s, higher education witnessed an increase in the diversity of students while enrollment in higher education reached approximately 14,000,000. With the matriculation of a wider array of students, higher education realized a need to understand these students better.

Researchers began to investigate issues that they considered possible influences on the experiences of students in higher education. Questions were raised as to the roles that gender, race, and socioeconomic status might play in a student's college experience. Comparatively, generational status is one factor that has not been given as much attention by researchers.

The purpose of the present study was to compare a sample of first generation students and non-first generation students who enrolled at the same institution in the same year. The goal was to provide a description of first generation students' demographic characteristics, pre-college behaviors, and values and beliefs.

Data on 3,966 first-year students who completed the Annual Freshman Survey (CIRP) and who enrolled at the selected institution in the fall of 1998 were analyzed. Results revealed significant differences on 64 out of 206 total chi-squares conducted. The majority of significant differences related to issues of money.

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Chapter One

Introduction

The degree of access to American higher education has changed over the years. An historical examination of American higher education from the colonial era (prior to 1776), the post-Revolutionary era (1776 to 1945), and the modern era (1945 to the present) tracks the evolution of access to higher education as it responded to the influences of government policies and economic factors.

Prior to 1776, the American colonists primarily looked to higher education to train a chosen group of citizens who comprised an elite part of the population (Brubacher & Rudy, 1996). Their function was to protect people from the savagery of the New World. Therefore, American higher education was predominantly for theological study by lay people and clergy (Trow, 1993).

The colonial colleges were geographically dispersed throughout the colonies. This resulted in the need for each school to establish a close connection with its colonial government in order to operate successfully. For the most part, colonial institutions were financed with public monies. As a result, the colonial governments were involved in the administration of the colleges (Trow, 1993).

The colonial economy influenced access to higher education in that it valued the colonial status quo. Since the institutions were primarily funded by the colonial governments, decision-makers looked to protect their interests. The narrow focus of the colonists towards higher education resulted in access for a small, select group of students (Trow, 1993).

Higher education was affected by changes following the Revolutionary War. From 1776 to 1945, there was a parallel movement between the growth of the country and the expansion of

the higher education system (Brubaker & Rudy, 1996). Gradually, universities began to represent opportunity and enrichment for people from many different walks of life (Altbach, 1993). A college education was viewed as something that should be available to anyone who was willing and able to meet the academic challenges. Increasingly, the expectation was that a person could be a college student regardless of race, gender, socio-economic background, or other demographic characteristic. The democratic spirit that drove America was seen in the evolution of the university system (Brubaker & Rudy, 1996).

The new country replaced the colonial system of government with a federal form of government. The new state and federal governments were not as close to or as directly involved in running the former colonial colleges. As a result, states were less restrictive in granting charters to schools and were also less interested in overseeing the administration of colleges and universities (Trow, 1993). Decisions by the federal government during the post-Revolutionary period also contributed to increased access to higher education. The actions (or lack of actions) taken by the federal government resulted in a policy that simultaneously affected higher education and yet allowed states, institutions, and their constituents to play an active part in higher education's affairs (Trow, 1993).

One important non-action was the failure to create a national university at the seat of the federal government in the District of Columbia. The lack of a national school competing for the students, faculty, and other resources allowed many other schools to thrive. The lack of a single national standard by which all institutions would be judged also allowed a wider range of curricula and missions. Without a national university, the federal government could not control higher education (Trow, 1993).

An additional factor in the expansion of higher education was the passage of the 1862 Morrill Act. In this legislation, the federal government granted land to states to use as they saw fit to provide opportunities for higher education to their citizens. For the most part, the federal requirements did not impinge on individual states' decisions as to who would benefit from higher education or what would be taught in postsecondary institutions. The result was a very wide range of quality and types of schools that further contributed to the American higher education system's diversity and accessibility (Millard, 1991; Trow, 1993). The growing number of public institutions as a result of this legislation also provided more students an affordable opportunity for postsecondary education (Millard, 1991).

As a result of these developments, higher education in America was free to operate within the naturally occurring elements of the market place. Anyone who had a desire and the resources to establish a college or university could do so. It was then up to the demand by and support of the citizens whether the school would prosper (Trow, 1993). From the post-Revolutionary period on, economic factors would influence the issue of access to American higher education.

The modern era (1945 to present) brought the influences of government policies and the economy on access to higher education to the foreground. Some demographics from this era illustrate the point. The total population of the United States grew 100% between the years of 1900 and 1948. During this same period, the college population increased almost 1000% (Brubaker & Rudy, 1996). Between 1900 and 1997 the percentage of 18-year-olds attending college increased from 4% to 65% of the population of 18-year-olds (Levine & Cureton, 1998).

Behind these numbers was a consistent policy of government support for Americans' expectations of higher education. Federal legislation provided more and more citizens an

opportunity to pursue a college degree. Veterans were able to access a postsecondary education by taking advantage of the Servicemen's Readjustment Act of 1944 (the G.I. Bill). The Truman Commission Report of 1947 established a community college system to offer citizens a more accessible and affordable education. Access for racial minorities was advanced with the United States Supreme Court's decision in *Brown v. Topeka Board of Education* in 1954. By declaring that "separate but equal" education for African-American students was unconstitutional, the ruling provided an impetus to address the concern of equal access to higher education for all citizens. Financial aid programs to make higher education available to those who could not otherwise afford it were also established during the modern era. These government policies played a key role in increasing access to higher education (Callan, 1993; Millard, 1991; Trow, 1993; Vaughan, 1992).

Economic issues during the modern era have also influenced access to higher education. There was a concern about the impact of returning veterans on the economy after World War II. Higher education cooperated with the G.I. Bill to give soldiers an opportunity to earn a college degree so they could bring different skills to the workplace.

In the 1980s, the economy was depressed and the corporate sector called on higher education to produce better-trained graduates. Colleges and universities responded to the demand for better-educated workers by opening their doors. Higher education recognized the need to provide an education to a more diverse population. Critics warned that failure to do so could result in a failed economy with an entrenched underclass (Davies, 1998). Minorities, women, and immigrants constituted an increasingly large percentage of the states' populations. States realized they must include these groups in their efforts to improve the educational level of their work force. The result was an increase from 49% of high school graduates in 1972 attending college to

62% of 1995 high school graduates entering a higher education institution (National Center for Education Statistics, 1998).

The overall effect of government policies and the economy during the three historical periods was an expansion of the role of higher education and the accompanying expansion of access to higher education. At the same time, the country's population was expanding. As the population increased, the degree of diversity within the population increased. Consequently, higher education saw its student population become more diverse, reflecting the society from which it came (Edwards, 1993).

During the 1980s and 1990s, higher education witnessed an increase in diversity while the number of students reached approximately 14 million students. Women represented more than half of the student population. The number of African American students held steady while the enrollment of Asian Americans doubled during the 1980s and 1990s. Hispanic students nearly doubled in number as well. The age of the American college student also changed. More students attended school who were not the traditional 18 to 22 years old. There were more part-time students and students who worked full-time jobs (Altbach, 1993; Baxter Magolda & Terenzini, 1999).

With the matriculation of a wider array of students, higher education realized the need to better understand these students. Educational leaders recognized that retention had to be one outcome related to increased access. If universities were sincere in their offer to educate students of both sexes, all races, and varied socioeconomic statuses, there had to be a system in place to make this goal achievable. Colleges needed more information about their students to implement the necessary structure to support students' successful academic experience. Consequently,

college campuses worked to provide a college experience to students from all types of backgrounds (Edwards, 1993; Levine, 1993).

More universities began to designate personnel and funds to provide students a more diversified system of support. Academic support offices provided summer programs targeted at underrepresented groups to help them make a successful transition to college. Departments with majors that traditionally were comprised predominantly of male students offered special programs for females in those majors. Colleges established offices to address multicultural issues. Institutions became increasingly aware of the role that student affairs professionals could play in responding to the consequences of increased access to higher education. Many schools instigated tutoring programs, study skills workshops, time management seminars, and counseling services for students from historically underrepresented populations (Edwards, 1993; Levine, 1993).

As the student population grew in numbers and diversity, researchers were challenged to define the population so they might study their experiences. Previously, the homogeneity of the student population was a standard part of the researchers' approach to their work. With the increasing diversity of the college population, that assumption was no longer appropriate (Pascarella & Terenzini, 1998).

Researchers began to investigate issues that they considered possible influences on the experiences of students in higher education. Questions were raised as to the roles that gender, race, socioeconomic status, and generational status might play in a student's college experience.

The effect of students' gender on their educational experiences spawned research in many areas (Jacobs, 1996; Morgan, 1996; Smith, 1990; Whitt, Edison, Pascarella, Nora, & Terenzini, 1999). For example, Whitt et al.(1999) studied the issue of classroom environments that make

female students feel uncomfortable. Smith (1990) conducted research that compared the experiences of women attending co-educational schools to the experiences of women attending women's colleges.

Researchers also investigated the role of race on students' educational experiences (Cokley, 1999; Jackson, 1998; Nisson, Paul, Lupini, & Tatem, 1999; Torres, 1999). For example, the use of a bicultural orientation program for Hispanic college students was presented in a study by Torres (1999). The role of race was explored in a comparison of two ethnic groups' attitudes towards perfectionism (Nisson et al., 1999).

The effect of socio-economic status on students' college experiences has also been a theme of higher education research (Baker & Steiner, 1995; Chaney, Muraskin, Cahalan, 1998; Lavin & Hyllegard, 1996; Levine & Nidiffer, 1996). For example, Chaney et al. (1998) conducted a longitudinal study to explore the effect of a federal program for disadvantaged students on retention. Another study interviewed students who had overcome lower-income backgrounds to get into college (Levine & Nidiffer, 1996).

Research that addressed generational status did not explore the effect of college experiences on first generation students as much as it examined the pre-college experiences of such students. The preponderance of research that examined first generation students emerged in the 1980s and studies continued into the 1990s (Brown, 1997; Carnegie Foundation for the Advancement of Teaching, 1986; Fallon, 1997; Fishman, 1997; Justiz & Rendon, 1989; MacDermott, Conn, & Owen, 1987; Olson & Rosenfeld, 1984a; Olson & Rosenfeld, 1984b; York-Anderson & Bowman, 1991). These studies can be organized into three categories: characteristics of first generation students prior to higher education, experiences of first

generation students prior to higher education, and descriptions of first generation college students.

The majority of research investigated characteristics of first generation students prior to their post-secondary schooling (Brown, 1997; Carnegie Foundation for the Advancement of Teaching, 1986; Fallon, 1997; Justiz & Rendon, 1989; Olson & Rosenfeld, 1984a; Olson & Rosenfeld, 1984b; York-Anderson & Bowman, 1991). For example, the degree of knowledge about financial assistance programs was found to be a distinguishing characteristic among first generation students. Olson and Rosenfeld (1984b) found that the level of knowledge concerning financial assistance greatly influenced first generation students' choices of whether to go to college and which college to attend.

The level of the parents' education was the subject of many studies (Brown, 1997; Fallon, 1997; MacDermott et al., 1987; Olson & Rosenfeld, 1984b). Many parents who have not attended college view college as a threat to the culture and values of the family (Fallon, 1997; Justiz & Rendon, 1989).

Experiences of first generation students prior to college was the second category of research (Brown, 1997; Carnegie Foundation for the Advancement of Teaching, 1986; Fallon, 1997; Justiz & Rendon, 1989; Olson & Rosenfeld, 1984a; York-Anderson & Bowman, 1991). The effect of interactions between high school counselors and first generation students was one example of the topics investigated in this category. It was found that school personnel frequently do not provide information about college to first generation students or provide them the assistance they need to apply for college admission (Olson & Rosenfeld, 1984a).

A third and much smaller body of work has examined first generation students in the college setting. Many of these studies compared the persistence rates of first generation students

to those of non-first generation students (e.g, Attinasi, 1989 as cited in Terenzini et al., 1995; Bean & Metzner, 1985 as cited in Terenzini et al., 1995; Richardson & Skinner, 1992 as cited in Terenzini et al., 1995).

One study provided a description of first generation students. Terenzini et al. (1995) compared pre-college characteristics and first-year experiences between first generation students and non-first generation students. The researchers also explored the question of whether any apparent differences in students' cognitive development could be connected with generational status. Results revealed that first generation students exhibited characteristics of cognitive development that differed from non-first generation students. In general, the authors argued that first generation students should be considered at-risk students. They recommended more research and support from higher education to help first generation students successfully achieve a college degree (Terenzini et al., 1995).

The issue of access to American higher education has focused over time on the balance of state and federal policy and economic factors. In recent years, the concern over access has centered on underrepresented groups in higher education and the corresponding concern about retention of these students. To understand retention of underrepresented students, higher education determined that it must better know the members of these populations. As research provided information about these groups, it was then important to compare and contrast traditional and underrepresented students in order to have a complete picture of the college student population. Studies have been conducted that investigate differences between traditional and underrepresented students by gender, race, and socioeconomic status. Studies comparing students by generational status, however, are more limited. The present study sought to address

this gap in the existing body of literature by comparing the experiences of first generation and non-first generation students.

Purpose of the Study

The purpose of the present study was to compare a sample of first generation students and non-first generation students who enrolled at the same institution in the same year. The goal was to provide a description of first generation students' demographic characteristics, behaviors, and beliefs. The data analyzed in the study were collected in 1998 at a Research I institution in the mid-Atlantic region through the administration the Annual Freshman Survey (AFS) (Sax, Astin, Korn, & Mahoney, 1998) designed by the Cooperative Institutional Research Program (CIRP).

For purposes of this study, first generation students were defined as students who had no parent with college experience. Non-first generation students were defined as students who had at least one parent with college experience.

Research Questions

The present study was designed to explore three research questions concerning first generation students:

1. Are there statistically significant differences between first generation students and non-first generation students in terms of demographic characteristics?
2. Are there statistically significant differences between first generation students and non-first generation students in pre-college behaviors?
3. Are there statistically significant differences between first generation students and non-first generation students in beliefs or values?

Significance of the Study

The present study was significant for both future practice and future research. In terms of practice, several constituencies might benefit from the results. For example, student affairs personnel might obtain a more detailed picture of first generation students as a result of this study. Staff might use this information to design programs to support first generation students at their institution.

Parents of first generation students might also benefit from the results of this study. The information from this study might give parents a more accurate depiction of their students and their beliefs and behaviors. This information might facilitate communication and understanding between first generation students and their parents.

First generation students might also make productive use of the findings of this study. The results might inform them about generational status and its definition in higher education. Given this information, they might better understand themselves and their similarities to and differences from other students. This knowledge might contribute to a sense of community for first generation students.

This study also had significance for future research. For example, future scholars might replicate the present study at a different type of institution. The participants in this study were students at a research I institution. By examining first generation students at a different type of institution (e.g. community college, liberal arts college), a broader understanding of first generation students might be achieved.

Exploring first generation students using a different definition of a first generation student than utilized in the present study could also be a basis for future research. The present study defined first generation students as those who had no parent with college experience. Other

scholars might define first generation students as those who have no relatives or associates with college experience. Using different definitions of first generation students might lead to different findings about these students.

A third possibility for future research would be for scholars to conduct a qualitative research project concerning first generation students. Such a study might involve gathering responses to students' feelings about their experiences in college or their expectations about their experiences in college. This type of qualitative data might provide a different picture of first generation students.

Limitations

As with all research, the present study was not without some limitations. One such limitation related to the sample. All participants were students at a Research I institution. It is possible that students at this institution differed in some important way from students at other schools. If so, the results might have been skewed.

The definition of first generation students employed by the researcher represented another sampling limitation. This study used a very narrow definition of first generation students. Other definitions could have been used. If other definitions had been used, the results might have been different.

A third limitation of this study was the technique used to collect the data. Participants were asked to self-report. The data depended on the candor of the participants' responses. If another technique for data collection had been used, the findings might have been different.

The present study was worthwhile in spite of these limitations. The research provided an opportunity for educators to learn more about first generation students. The present study laid the groundwork for future studies that explore first generation students.

Organization of the Study

The study was organized around five chapters. Chapter One provided an introduction to the study, the purpose of the study, and the research hypotheses posed in the study. The second chapter provides a review of the literature relevant to the topic of the study. Chapter Three reports the methodology employed in the study, including the sampling techniques and procedures used to collect and analyze the data. The fourth chapter presents the results of the study, while Chapter Five discusses those results and their implications for future practice and research.

Chapter Two

Literature Review

The present study was designed to examine three issues related to first generation students. The first issue was the demographic characteristics of first generation students. Consequently, it was necessary to examine the existing literature on this topic. The second issue investigated in the present study was first generation students' pre-college behaviors therefore existing literature on this topic was reviewed. Two sub-topics emerged: interactions with family and interactions with non-family members. The third topic related to first generation students' beliefs and values so it was important to look at existing literature on this issue. Again, two sub-topics emerged: pre-college values and beliefs; and, values and beliefs of first generation students in college. This literature review was organized around these three major categories and their respective sub-topics.

First Generation Students' Demographic Characteristics

A limited number of studies have investigated the demographic characteristics of first generation students (Billson & Terry, 1982; Inman & Mayes, 1999; Riehl, 1994; Terenzini et al., 1995; Ting, 1998). The demographic data were either contained in a footnote of a study or were a part of a broader study about first generation students.

One demographic characteristic reported was the income levels of the families of first generation students and non-first generation students. Family incomes overall are lower for first generation students than for non-first generation students (Billson & Terry, 1982, Inman & Mayes, 1999; Terenzini et al., 1995; Ting, 1998). The implications for first generation students are seen both before and during the college experience. Poorer families may not support their

first generation students' decisions either philosophically or financially. First generation students are likely to experience more financial pressures during their college experience.

Billson and Terry (1982) also studied the two groups of students in regard to employment outside of school. First generation students are likely to work more hours per week in off-campus jobs than non-first generation students (Billson & Terry, 1982; McGregor, Mayleben, Buzzanga, Davis, & Becker, 1991).

If any difficulties arise from dual demands of work and academics, first generation students differ from non-first generation students in their reaction to those difficulties. The need for income may be more critical for first generation students since many are from poorer economic backgrounds. As a result, first generation students are not as quick to quit their jobs as non-first generation students (Billson & Terry, 1982; McGregor et al., 1991).

The issue of race also has been studied. First generation students are more likely to be Hispanic than non-first generation students. There are no other significant differences by race between the two groups, however (Terenzini et al., 1995).

The two groups of students also differ in terms of gender. First generation students are more likely to be female than non-first generation students (Inman & Mayes, 1999; Terenzini et al., 1995).

Research also revealed a difference between the two groups of students in regard to age. First generation students are likely to be older than non-first generation students (Inman & Mayes, 1999; Terenzini et al., 1995). This may not be surprising since many first generation students do not have family incomes that allow them to continue their education immediately upon high school graduation. Many first generation students have to work to save money before they can enroll in college.

First generation and non-first generation students also differ in the number of dependents they support. First generation students are likely to have more dependents than the non-first generation students (Inman & Mayes, 1999; Terenzini et al., 1995). Consequently, first generation students have to live at home and continue working while enrolled in classes. The additional responsibilities of dependents can also interfere with first generation students being able to participate in extracurricular activities.

Riehl (1994) investigated the combined SAT scores of first generation and non-first generation students. The data showed that first generation students have test scores that are significantly lower than their non-first generation counterparts. The mean SAT score for first generation students is 791. Meanwhile, the mean score for non-first generation students is 840.

The same study compared high school grade point averages of first generation students and non-first generation students. Non-first generation students earn significantly higher high school grade point averages than first generation students (Riehl, 1994). The high school grade point average for first generation students is 2.68. The study reported the high school grade point average for non-first generation students as 2.73.

Finally, high school class ranks of first generation and non-first generation students were studied. There is no significant difference in high school class ranks between first generation students and non-first generation students (Riehl, 1994).

Information about the demographic characteristics of first generation students can give a clearer picture of first generations in higher education. Data about first generation students' pre-college behaviors can also contribute to that picture.

First Generation Students' Pre-College Behaviors

The largest group of literature on first generation students looked at first generation students' behaviors before entering college. To better examine this body of information, the category was divided into two sub-topics. The first sub-topic was literature that studied first generation students' interactions with their family. The second sub-topic was literature that examined first generation students' pre-college experiences with non-family members such as school counselors.

First Generation Students' Interactions with Family

Studies have documented the effect of parents' level of education and lack of college experience on the first generation students (Carnegie Foundation for the Advancement of Teaching, 1986; MacDermott et al., 1987; Olson & Rosenfeld, 1984a; Riehl, 1994). For example, first generation students report a lower degree of encouragement from family concerning their college aspirations than non-first generation students report (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1995). While the degree of support might be lower, there are both positive and negative effects on first generation students based on their parents' lack of college experience.

The main positive outcome for first generation students is that parents are oftentimes very involved in the decision to attend college (Carnegie Foundation for the Advancement of Teaching, 1986; Olson & Rosenfeld, 1984a). This involvement includes discussions about not only which colleges to consider but also whether the student should go to college or not. Although peers, teachers, and counselors might contribute to this process, the parents predominate (Carnegie Foundation for the Advancement of Teaching, 1986; MacDermott et al., 1987; Olson, & Rosenfeld, 1984a).

The parents of first generation students who support their children's pursuit of a college degree are often more direct in their influence over their children than college-educated parents are with respect to their children's college decisions (Carnegie Foundation for the Advancement of Teaching, 1986). Because attending college is not a presumed part of life for first generation students, it is a decision that involves the entire family (MacDermott et al., 1987). The cost of attending college, for example, requires a commitment from both parents and students (Olson, & Rosenfeld, 1984a). Consequently, parents play a large part in the decision to attend college among first generation students (Carnegie Foundation for the Advancement of Teaching, 1986; Olson, & Rosenfeld, 1984a).

For other first generation students, parents' lack of college experience can have negative effects. Parents may not be supportive of the students' interest in attending college. This lack of encouragement can affect the students' relationships with their parents when the parent feels threatened by the unfamiliar world of higher education (Brown, 1997; Fallon, 1997; Justiz & Rendon, 1989; York-Anderson & Bowman, 1991). For many parents of first generation students, college represents a threat to the culture and values of the family (Fallon, 1997; Justiz & Rendon, 1989; Terenzini, Rendon, Upcraft, Millar, Allison, Gregg, & Jalomo, 1994). As a result of this tension, London (1989) described students feeling torn between their family and their schooling (as cited in Terenzini et al., 1995).

First generation students often deal with attitudes of failure or fear based on parents' post-secondary inexperience (Brown, 1997; Fallon, 1997). Parents who are not college graduates might not see the value of a college education (Fallon, 1997; Justiz & Rendon, 1989). These parents might also be concerned that their children cannot succeed in higher education (Fallon, 1997).

Parents who have not attended college also might not understand the demands and responsibilities facing their students. This lack of appreciation might result in difficulties between parents and children during the pre-college years. For example, the parents might have unrealistic expectations of how their children will handle the college search process (Brown, 1997).

Research has suggested that first generation students and their parents do not know about a number of issues that affect their decision to attend college (Fallon, 1997; Fishman, 1997; Olson & Rosenfeld, 1984a; Olson & Rosenfeld, 1984b). Lack of information about relevant issues such as financial aid and academic requirements influences how first generation students and their parents negotiate the college search and selection process.

Lack of knowledge about financial assistance was found to affect first generation students' college choices (Olson & Rosenfeld, 1984b). Students and parents often do not know about banks and loan procedures. Students also appear uncertain as to whether they want to put such financial a demand on their families (Fallon, 1997).

Research has also shown that many first generation students enter college less prepared for the academic challenges of post-secondary education. A study by Fishman (1997) reported that first generation students' computer skills are directly related to the parents' level of education. Students whose parents are not college graduates are less likely to have the computer skills necessary to be successful in college (Fishman, 1997).

In addition, researchers found that parents of first generation students cannot rely on personal experience to give them the necessary information for developing their children's educational path. As a result, they cannot collaborate with school representatives to set positive and attainable educational goals for their children (Brown, 1997).

Students whose parents have no college experience also lack an important support system that is provided to students of college graduates. Non-college-educated parents cannot offer their students role models of success in higher education. First generation students must negotiate the college search process without the benefit of knowing what lies ahead for them if they pursue higher education (Fallon, 1997; Riehl, 1994; York-Anderson & Bowman, 1991).

The college search is often conducted differently by first generation students and parents compared to non-first generation students. First generation students and parents tend to make fewer trips to visit college campuses than the number of visits made by non-first generation students. The campus visits by first generation students are typically to schools closer to home than the trips made by non-first generation students (MacDermott et al., 1987). As a result, first generation students are more likely to choose a school that is closer to their home (Zemsky & Oedel, 1983).

First generation students are also more likely than non-first generation students to visit campuses by themselves or with friends rather than with their parents. The parents are often employed in occupations that do not allow them to take time off for such trips. Additionally, the parents may not be able to afford the loss of pay resulting from taking time off from their job (MacDermott et al., 1987).

First generation students are not only influenced by their parents when it comes to pursuing a college education. Experiences in high school with non-family members can also play a role in the process for first generation students.

First Generation Students' Interactions with Non-Family Members

First generation students differed from non-first generation students in several ways in regard to pre-college experiences with non-family members. For instance, first generation

students indicated they spend less time in social activities with friends than non-first generation students during the pre-college years (Terenzini et al., 1995).

Unfamiliarity with financial aid programs and paperwork means students without college-experienced parents have to turn to outside sources such as high school guidance counselors for this information. Oftentimes, however, high school counselors do not provide the needed information and assistance to first generation students. As financial assistance has become increasingly loan-based rather than grant-based, this need to rely on others for help has become more crucial to first generation students (Fallon, 1997; Olson & Rosenfeld, 1984a).

Research has indicated that first generation students, however, often are not encouraged by high school teachers or counselors to pursue a college degree. First generation students report a lower degree of support from high school teachers and counselors than non-first generation students report (Terenzini et al., 1995). Many high school counselors do not help first generation students to select courses in high school that will adequately prepare them for post-secondary education (Fallon, 1997; Olson & Rosenfeld, 1984a). The gap in first generation students' academic skills is often traced to weaker high school programs and lack of encouragement from counselors and teachers (Fallon, 1997).

While some research has examined first generation students' behaviors before they matriculate in college, other scholars have looked at the values and beliefs of first generation students after they enroll in college. Research has provided insight into the ways first generation students view themselves and higher education.

First Generation Students' Values and Beliefs

First generation students develop values and beliefs about themselves and higher education both prior to attending college and while they are in higher education. Research has been conducted to explore first generation students' values and beliefs in both periods.

First Generation Students' Pre-College Values and Beliefs

A study by Billson and Terry (1982) specifically looked at why first generation students pursue higher education. The researchers concluded that first generation students decide to pursue a college degree for much the same reasons as non-first generation students. First generation students believe they will increase their knowledge and prepare for a career by earning a college degree (Billson & Terry, 1982).

The desire to improve their social and economic situation is the motivation for many first generation students to pursue a postsecondary degree. But with that desire could come uncertainty as first generation students often feel torn between two cultures (London, 1992). For many first generation students, seeking a college education means turning their back on family tradition and failing to honor that tradition (Terenzini et al., 1994).

Consequently, first generation students' value of higher education can be less synchronized with their parents' opinion of the importance of a college degree. Non-first generation students reported a greater parental emphasis on a college education than first generation students reported (Pratt & Skaggs, 1989). The gap between student and parent in the valuing of higher education is often wider for first generation students and their parents than non-first generation students (Billson & Terry, 1982).

There can be an accompanying pressure from first generation students' friends not to leave home and join the new world of higher education. First generation students may struggle to

deal with the opinions of their peers that conflict with their own thoughts (Inman & Mayes, 1999).

First generation students come to campus with certain values and beliefs in hand. But the values and beliefs of first generation students as they pursue a postsecondary education are also important to examine.

First Generation Students' Collegiate Values and Beliefs

The perception of first generation and non-first generation students concerning their transition from high school to college has been studied. Non-first generation students reported an easier experience than first generation students reported. Without a college-experienced parent, first generation students lack someone to help guide them in facing the new challenges of higher education (McGregor et al., 1991).

The two groups of students were also asked about their level of preparation for college. First generation students indicated less certainty as to how well prepared they were for postsecondary education (Inman & Mayes, 1999; Pratt & Skaggs, 1989).

Unfamiliarity with the college experience may influence first generation students' assessment of the demands of postsecondary education. For example, research showed that first generation students are likely to work more hours in off-campus jobs than non-first generation students work (Terenzini et al., 1995). It is possible that first generation students believe they can successfully handle both their academic responsibilities and work an outside job. It is also possible that the financial situation of first generation students requires them to work while in school (Inman & Mayes, 1999).

Additional concerns of first generation students can be traced to financial issues. Research showed that first generation students report close proximity of a college to home as a

more important criterion in choosing a school than non-first generation students indicate. The ability to stay at home while attending school is more highly valued by first generation students than non-first generation students. These findings suggest first generation students place high value on being able to live at home while attending school to keep down the costs of a college degree (Inman & Mayes, 1999).

The question of how important night classes are to first generation students and non-first generation students also has been explored. First generation students value the availability of night classes more highly than non-first generations students do. This finding may be linked to the financial constraints of first generation students that require them to work during the day (Inman & Mayes, 1999).

A school's reputation for teaching was another issue that was studied. First generation students at a community college considered the teaching reputation of their school to be a higher priority than non-first generation students. This concern for school reputation by first generation students may result from the role of community college enrollment in the two groups' plans. More non-first generation students report intentions to eventually transfer to another school. For many first generation students, the community college is the final destination (Inman & Mayes, 1999).

A measure that indicated significant differences between first generation and non-first generation students was the highest degree students believed they would ever seek or that they expected to earn at their current institution. Non-first generation students aspire to earning a higher level of degree in both instances (Pratt & Skaggs, 1989; Riehl, 1994; Terenzini et al., 1995). First generation students' assessment of lower levels of academic preparation for college may contribute to their expectations of corresponding lower levels of academic achievement.

While the level of degree each group of students aspired to might be different, there was no significant difference in how the two groups of students viewed the importance of those degrees. Both first generation and non-first generation students believe they are dedicated to earning their college degree (Pratt & Skaggs, 1989).

The two groups of students were compared as to their expectations of grades earned in their first semester in college. First generation students had lower expectations of first semester grades than non-first generation students (Riehl, 1994). This finding coincides with first generation students' reported lower self-rating of academic preparedness for higher education.

First generation and non-first generation students also differed in their expectation with respect to additional time needed to complete their degree program. First generation students expect that it will take them more time to complete their degree program than non-first generation students indicate (Terenzini et al., 1995). This belief could be a result of first generation students considering themselves less academically prepared. First generation students may also feel this way because they know they must split their time and energy between school and work.

Research has also revealed a difference in perceptions of faculty concern for students and teaching. First generation students report a lower degree of belief that faculty care about students and teaching (Terenzini et al., 1995). In contrast, however, they believe that interacting with faculty while in college is important (Pratt & Skaggs, 1989).

Confidence in the selected major course of study was another area in which first generation and non-first generation students were dissimilar. First generation students report a higher degree of certainty that they have selected the correct academic major for themselves

while non-first generation students are more uncertain about their academic choices (Terenzini et al., 1995).

Campus climate is perceived differently by first generation and non-first generation students. First generation students are more likely to report having experienced racial or ethnic discrimination (Terenzini et al., 1995).

First generation and non-first generation students differ in their emphasis on increasing self-confidence while in college. First generation students consider increasing self-confidence as a more important goal than non-first generation students (Inman & Mayes, 1999). This finding suggests that first generation students may be looking at the college experience as one that benefits the student beyond the academic realm.

Research also has explored the issue of self-esteem among first generation and non-first generation students. Not surprisingly, first generation students score lower in terms of self-esteem than non-first generation students (McGregor et al., 1991). Such a perception by first generation students is consistent with an overall feeling of uncertainty resulting from a lack of parental role models of the higher education experience.

Social acceptance is another issue that has been explored in the literature. Non-first generation students are more likely to perceive themselves as socially accepted than first generation students (McGregor et al., 1991). Again, the unfamiliarity with higher education could cause first generation students to question whether they truly fit in the collegiate scene.

First generation students and non-first generation students were also studied in regard to sense of humor. Non-first generation students score higher on the dimension of humor than first generation students (McGregor et al., 1991). The balancing act between work and school, family

and personal aspirations, survival and advancement could contribute to first generation students scoring lower in this dimension.

When researchers explored the two groups of students with respect to perceived creativity, there was a difference between first generation students and non-first generation students. First generation students consider themselves much less creative than their non-first generation counterparts (McGregor et al., 1991). This finding provides further support to the image of first generation students as having a lower opinion of themselves. First generation students may be responding to the negative messages of unsupportive family and non-family members.

In a comparison of first generation and non-first generation students at a community college, there was a difference between the two groups of students in regard to alternative postsecondary education plans. When asked what they would do if the community college were not available, non-first generation students are much more likely to consider attending a state university. First generation students are more likely to not pursue any alternative education. Vocational-technical schools are also much more likely to be a second choice for first generation students than non-first generation students (Inman & Mayes, 1999).

Students at a four-year college were asked questions concerning level of commitment to their institution. Non-first generation students are more likely to have applied to more than one school during the college search process than first generation students were (Pratt & Skaggs, 1989). This finding suggests that financial demands may limit the options of first generation students. The need to keep a job may mean first generation students have to find a school that will not interfere with their work obligations. Consequently, the choice of schools is restricted to those institutions in close proximity to first generation students' homes.

The same students also responded to an inquiry about the possibility of transferring to another school. Non-first generation students report a greater likelihood of transferring to another school than first generation students (Pratt & Skaggs, 1989). College choice may be limited for first generation students by such factors as cost and class schedules. The overall result is much less flexibility and fewer options for first generation students.

First generation and non-first generation students also report dimensions in which there are no significant differences in their values or beliefs. For example, there is no significant difference between the two groups in terms of perceptions of their job and athletic competencies. Research suggests that first generation students recognize possibly harder times in making the transition to college. But first generation students express a belief that they are just as capable as non-first generation students to be successful (McGregor et al., 1991).

Researchers also delved into first generation and non-first generation students' assessment of their scholastic abilities. There is no significant difference in the two groups' self ratings in terms of academic ability or mathematics ability. Both groups report competency in academic and mathematics ability (McGregor et al., 1991; Pratt & Skaggs, 1989).

First generation and non-first generation students also were asked about their close relationships and romantic relationships. There is no significant difference between the perceptions of first generation students and the perceptions of non-first generation students in these domains (McGregor et al., 1991).

Students from both groups were asked to rate the importance of participating in extracurricular activities or attending campus events such as concerts or athletic events. There is no significant difference in how the students in the two groups rate such experiences. Members in both groups considered participation in such events important. Results revealed, however, that

first generation students are not as likely to attend these types of events as non-first generation students are (Pratt & Skaggs, 1989; Terenzini et al., 1995).

Researchers also investigated perceived global self-worth for first generation and non-first generation students. No significant difference was found in the two groups' perceptions of their global self-worth (McGregor et al., 1991).

Upon review of the existing literature, the research has focused on first generation students' pre-college behaviors. There are also a number of studies that explores first generation students' values and beliefs. A much smaller body of work examines the demographic characteristics of first generation students.

The purpose of this study is to build upon the existing body of knowledge about first generation students in higher education. This study will use data collected from a well-established instrument that has been used for over 30 years in gathering information about incoming freshmen. There will be an examination of all three areas (demographic characteristics, pre-college behaviors, and values and beliefs) in regard to generational status. The participants in the study were a recently entering class of a Research I institution. The breadth and depth of this study will provide a comprehensive look at first generation students. Additionally, the fact that the data were so recently collected will give a more current report on first generation students in higher education. All in all, the technique and timeliness of this study will provide higher education with a more accurate picture of first generation students than is now available.

Chapter Three

Methodology

The purpose of the present study was to conduct an ex-post facto analysis of first generation students and non-first generation students who enrolled at the same institution in the same year. The goal was to provide a description of first generation students' demographic characteristics, pre-college behaviors, and values and beliefs in comparison to their non-first generation counterparts.

Specifically, the present study was designed to explore three research questions:

1. Are there statistically significant differences between first generation students and non-first generation students in terms of demographic characteristics?
2. Are there statistically significant differences between first generation students and non-first generation students in terms of pre-college behaviors?
3. Are there statistically significant differences between first generation students and non-first generation students in terms of beliefs or values?

Sample Selection

The population involved in this study was the fall, 1998 entering freshman class at a large, public, Research I institution located in a mid-Atlantic state. The total enrollment of fall 1998 freshmen was 4,776 students.

The sample drawn from the population were the entering freshmen who completed the Annual Freshman Survey (AFS) designed by the Cooperative Institutional Research Program (Sax, Astin, Korn, & Mahoney, 1998). The AFS was administered in July of 1998 during the institution's orientation program.

The sample for the present study included the 3,966 students who completed the AFS survey in July 1998. The sample represented 85% of the 1998 freshmen class at the selected institution.

Instrumentation

This study used the database created by the Cooperative Institutional Research Program (CIRP) Annual Freshman Survey (AFS) (Appendix A). The AFS data are designed to examine a number of demographic characteristics, pre-college behaviors, and values and beliefs among entering freshmen. This instrument was first administered in 1966 at over 700 American institutions of higher education. The AFS is, to date, the most extensive study of students in American higher education (Cooperative Institutional Research Program, 1999a).

Each year the AFS consists of two parts. The first part of the survey is the standardized questionnaire that all participating institutions administer to entering freshmen. The second part of the AFS is a supplemental section in which individual institutions may ask questions of particular interest. The instrument administered in 1998 contained a total of 41 sections in the first part of the survey. The institution in this study added four questions in the supplemental section (see Appendix B). The result was a total of 45 sections in the 1998 AFS administered at the institution in this study.

For purposes of this study, the researcher examined the sections on the AFS and assigned them to categories. One section was divided into two parts so the data could be used for two research questions. This section elicited data that pertained to more than one research question: one part asked respondents to identify their parents' occupations and a second part asked respondents to indicate the occupation they expected to pursue after college. Because the first part of the section explored demographic characteristics and the second part explored

values/beliefs, data from the section were assigned two categories. This resulted in an analysis of a total of 46 sections.

Fifteen sections were deemed to have no relevancy to the purpose of this study. For example, sections that asked about status of citizenship and religious preference were not analyzed for purposes of the study. One section was used to sort the data by generational status (first generation versus non-first generation). The remaining 30 sections were used either to describe the sample or to explore one of the three research questions posed in the study. Eleven sections were used to describe demographic characteristics of the sample. Nine of those sections were also used in studying the research question concerning demographic characteristics. Two sections (year of high school graduation and school's distance from home) were used only in the sample description. One additional section was used in studying demographic characteristics, thus making a total of 10 sections assigned to this research question. Four sections were used to investigate the research question pertaining to pre-college behaviors. The remaining 14 sections were assigned to study the research question concerning beliefs and values.

Ten sections dealt with demographic characteristics. Examples of sections on demographics asked respondents to report their gender, age, any disability, and ethnicity. There were also demographic sections about academic characteristics. The instrument asked participants about high school grade average, enrollment status, and standardized test scores. Demographic sections also elicited data about respondents' family and background. Each parent's occupation was elicited in the instrument. There was a question about family income. The survey also asked respondents to identify sources of financial support (e.g. family, scholarships, part-time job) and to indicate how much support each source was expected to provide for educational expenses.

Four survey sections investigated respondents' pre-college behaviors. The topics of these sections were focused on either curricular or co-curricular behaviors. There were two sections that investigated participants' academic-related behaviors in regard to preparation for college. Respondents were asked about the number of high school courses they took in various subjects. Respondents were also asked the number of colleges to which they had applied. The remaining two sections on the pre-college behaviors asked about both curricular and co-curricular behaviors. For one section, respondents indicated in general terms (frequently, occasionally, or not at all) how often they had engaged in various activities. Activities in this section included being bored in class, smoking, drinking, and tutoring another student. The second section asked respondents to be more specific as to how many hours they spent in various activities. The choices ranged from none to over 20 hours per week. The behaviors explored in this section included partying and talking with teachers outside of class.

The instrument also contained 14 sections about respondents' values and beliefs. The topics of these sections included academic issues, philosophical issues, and respondents' beliefs about themselves. Nine sections explored respondents' values and beliefs about academic issues. The survey asked respondents to indicate how important various factors were in their decision to go to college. There was also an section that asked respondents to report how important different factors were in their decision to attend the institution at which they enrolled. One section asked respondents to indicate what their expected major program of study would be. The survey also asked a two-part question about the highest level of degree respondents expected to earn. Participants answered this section in terms of highest expectations and specifically what level of degree they expected to earn at the attending institution. Respondents were also asked to report the likelihood of doing certain things while in college such as changing their major or joining a

social fraternity. One section asked respondents about their beliefs concerning their ability to pay for their college education. Another section investigated respondents' expected occupation. The survey also included two sections pertaining to computer use in classes. One of those sections asked respondents to assess whether they would learn more in classes requiring computer usage. The other section asked respondents to indicate whether they believed courses requiring computer use would be more challenging than traditional courses.

One belief-related section on the survey explored respondents' philosophical beliefs. The survey asked participants to indicate the degree with which they agreed or disagreed with a list of statements. These statements addressed issues ranging from the role of the federal government in controlling the sale of handguns to abortion.

The survey also contained four sections that requested information about respondents' beliefs about themselves. One section explored respondents' self-evaluation of various traits such as creativity in comparison to others. Participants were also asked to select a label for their political views from a list that ranged from far left to far right. In another section, respondents were asked to indicate the degree of importance they placed on accomplishing various tasks. This section included tasks such as raising a family and developing a meaningful philosophy of life. The survey also asked respondents to rate themselves in terms of computer experience.

Reliability and Validity

Reliability addresses the extent to which data from a particular instrument are constant and accurate (Gall, Borg, & Gall, 1996). The AFS has been administered every year since 1966. Currently, some 700 institutions administer the instrument to their entering students each year. In the course of the past 33 years, data from over 8,000,000 students have been collected

(Cooperative Institutional Research Program, 1999b). The consistency of the answers throughout the years within institutions suggests the instrument to be reliable.

Validity considers the suitability and usefulness of data produced from an instrument (Gall, Borg, & Gall, 1996). The AFS was piloted before being administered nationwide. During its 33 years of use, the survey has been reviewed regularly by an advisory committee of people who have used the survey. Their job is to make sure the questions remain relevant to the students being surveyed. Input from users who are not on the committee is also accepted (Sax, Astin, Korn, & Mahoney, 1998). This system contributes to maintaining the instrument's validity. Additionally, the findings of the AFS are consistent with other data sources which further strengthens the validity of the instrument.

Data Collection Procedures

The AFS data were provided to the researcher by the Director of the Academic Assessment Program at the institution where the study was conducted. The institution administered the AFS to all entering freshmen at the campus test site on designated days during the summer before they matriculated. The institution then submitted completed instruments to the CIRP processing contractor for analysis. When the data were returned from CIRP, the institution transferred the data to an SPSS (Statistical Package for the Social Sciences) format. The assessment office provided the researcher with a copy of the data in that SPSS format. The student identification numbers had been removed to protect individuals' privacy.

Data Analysis Procedures

The purpose of the present study was to describe first generation students who were enrolled at the selected institution in the fall of 1998. The responses of first generation students

were compared to the responses of non-first generation students. The data used in this study were analyzed in two phases to accomplish this goal.

The first phase required coding the respondents to identify them as either first generation or non-first generation students. The researcher used data provided by respondents about their parents' level of education to assign participants to groups. The AFS section referring to parents' level of education offered eight response options for each parent. Respondents could report that their mother's highest level of education was grammar school or less, some high school, high school graduate, postsecondary school other than college, some college, college degree, some graduate school, or graduate degree. The respondents also indicated the highest level of education achieved by their father using these same options.

The researcher chose to define first generation students as those for whom neither parent had any college experience. This decision was supported by the use of this definition by other researchers (Billson & Terry, 1982; London, 1992; McGregor, et.al, 1991; Pratt & Skaggs, 1989). To be consistent with this definition, only respondents who reported that both parents had either grammar school or less, some high school, high school graduate, or postsecondary school other than college were designated as first generation students. Participants who reported that either parent had some college, a college degree, some graduate school, or a graduate degree were designated as non-first generation students. The participants were divided into two groups through this process: first generation students (FGs) and non-first generation students (NFGs).

Data from a total of 28 sections were analyzed for this study in terms of the research questions. There were, however, many sections with multiple items. An initial tally showed a total of 209 items. For the purpose of this study, the items in three sections were adjusted. In the section on disability, the survey asked participants to identify any applicable disabilities. For the

purpose of this study, the responses were collapsed to indicate only whether the participant did or did not have a disability. This resulted in the number of items for this section to be decreased from six to one. Similarly in the section on race, the number of items was reduced from eight to five. Mexican American/Chicano, Puerto Rican, and Other Latino were collapsed into one item. American Indian and Other were also collapsed into one item. The third section that was adjusted for the purpose of this study concerned financial sources. In the survey, participants were asked to mark one answer indicating the amount of support they expected to receive from each of the 20 possible sources. For the purposes of this study, the data were analyzed twice. Financial sources were analyzed as to whether respondents received any or no support from the various sources. Financial sources were also looked at as to whether respondents received less than \$1500 or \$1500 or more from each possible source.

Consequently, the total number of items analyzed in this study was 221. Appendix C reports the assignment of the sections in the study (sections not used, section used for sorting data, description of the sample, demographics, pre-college experiences, value/beliefs). Appendix C also provides information about items associated with each section as well as items not used in the data analysis.

Frequency counts of 11 sections were then used to provide a description of the sample. The sections used included gender, age, race, disability, and school's distance from respondents' homes. Sections reporting academic information such as high school grade point average, enrollment status, standardized test scores, and year of high school graduation were also used to describe the sample. Finally, the sample was described in terms of parents' total income and occupations.

The responses of the two groups to selected AFS sections were then analyzed for frequency counts in terms of each research question. Ten sections were analyzed to provide data about differences in demographic characteristics between the two groups (FGs v. NFGs), while four sections were analyzed to furnish data about pre-college behaviors. The research question concerning beliefs and values was analyzed through 14 sections on the survey.

For example, in exploring the demographic characteristics of the two groups, the first question asked the students to identify their gender. The frequencies of males and females for first generation and non-first generation students were recorded. The frequencies with which each group responded to each item in each section of the instrument were calculated in this fashion.

The second phase of the data analysis was to conduct chi-square tests on the data provided by FGs and NFGs. The purpose of this step was to investigate whether there were significant differences between these two groups that accounted for the expected frequency versus the observed frequency (Gall, Borg, & Gall, 1996). All sections involved in the analysis yielded categorical data, thus chi-square tests were appropriate. The analyses were conducted to address each of the research questions.

For example, the first research question explored differences between FGs and NFGs in terms of demographic characteristics. To answer this question, the researcher conducted a series of chi-square tests on the responses to the items in the 10 sections on the AFS that elicited data about demographic characteristics. A total of 56 chi-square tests were run so that data on all items associated with each section were analyzed.

The second research question studied the possibility of differences between FGs and NFGs in terms of pre-college behaviors. The researcher ran a total of 52 chi-square tests, one on each of the items associated with the four sections assigned to this category.

The research question pertaining to beliefs and values of FGs and NFGs was then examined. Analysis of the data from the 14 sections required a total of 113 (one for each item) chi-square tests to be run.

The total number of chi-square tests conducted to investigate the three research questions posed in the study was 221. In running the chi-square tests, a decision had to be made concerning the level of significance (p-value). Due to the large size of the sample, the decision was made that an alpha level of .01 should be used for the tests. The reason for this decision was a desire to lower the risk of getting a Type I error. That is, when running 221 chi-square tests at the $p < .05$ level, it would be expected to find at least 10 significant differences, 5 for each 100 tests conducted. By using the more rigorous level of significance ($p < .01$), the researcher diminished the possibility that the 221 tests revealed differences that would have occurred by chance. Hence, significant differences that were revealed provided more reasonable evidence of differences between FGs and NFGs.

Using this alpha level, the data were then analyzed as to significant differences. After conducting all chi-square tests for each research question, the results were examined in terms of the research questions. If more than 50% of the results suggested a significant difference between FGs and NFGs, the conclusion was drawn that there were differences between the two groups in terms of that particular research question. If less than 50% of the results suggested a significant difference between FGs and NFGs, then the conclusion was drawn that there were not differences between the two groups in terms of that particular research question.

The present study was designed to describe the demographic characteristics, pre-college behaviors, and values and beliefs of first generation students through analysis of responses to selected sections of a survey. The methodology described in this chapter was deemed sufficient to respond to the research hypotheses posed in this study.

Chapter Four

Results

The purpose of this chapter is to report the findings of the study. The sample of first generation students and non-first generation students is described through the reporting of frequency counts of selected items from the instrument. Chi-square analyses of selected items were then conducted to provide data concerning the demographic characteristics, pre-college behaviors, and beliefs and values of the sample.

Description of the Sample

A total of 3,966 students participated in the study. Of those, 373 were assigned to the First Generation group (FG) and the remaining 3,593 were assigned to the Non-First Generation group (NFG). Eleven sections of the instrument were used to generate data pertaining to the demographic characteristics of the sample. Some sections had multiple items. Consequently, the eleven sections consisted of a total of 54 items. Frequency counts of the sample for each item are reported in Table 1 by generational status. The table includes the number of respondents who reported each characteristic, and the percentage of that subgroup that number represents. For example, gender was broken down into “male” and “female” categories. The number of male, first generation students was 224. This number represented 60.1% of the 373 first generation students in the sample.

Results of the Study

An overview of the results of all chi-square analyses for the study is presented in Table 2. The researcher originally planned to analyze 10 sections related to the question about statistically significant differences between first generation students and non-first generation students in terms of demographic characteristics. Two sections were removed from the analyses because the

Table 1

Demographic Characteristics of the Sample by Generational Status (N=3966)

Characteristics	FG (n=373)		NFG (n=3593)	
	n	%n	n	%n
Gender				
Male	224	60.1	2015	56.1
Female	149	39.9	1524	42.4
Age				
18 and younger	285	76.4	2827	78.7
19 and older	86	23.1	695	19.3
Year graduated from high school				
1998	353	94.6	3475	96.7
prior to 1998	17	4.6	41	1.1
Enrollment status				
Full-time	370	99.2	3514	97.8
Part-time	0	0	0	0
Institution's distance from home				
100 miles or less	59/15.8	15.8	424	11.8
101-500 miles	278	74.5	2760	76.8
over 500 miles	27	7.2	309	8.6
High school GPA				
A+ or A	84	22.5	746	20.8
A-	105	28.2	776	21.6
B+	108	29	1088	30.3
B	55	14.7	830	23.1
B- or below	19	5.1	109	3

Table 1 (continued)

Characteristics	FG (n=373)		NFG (n=3593)	
	n	%n	n	%n
SAT and ACT scores				
SAT Verbal				
Less than 500	55	14.7	257	7.1
500 – 590	167	44.8	1415	39.4
600 – 690	71	19	1122	31.2
Greater than 690	12	3.2	220	6.1
SAT Math				
Less than 500	23	6.2	162	4.5
500 – 590	145	38.9	1161	32.3
600 – 690	112	30	1343	37.3
Greater than 690	26	7	353	9.8
ACT				
Less than 22	3	.8	52	1.4
23 – 30	17	4.5	237	6.5
Greater than 30	2	.5	45	1.2
Parental annual income				
Less than \$60,000	229	61.4	976	27.2
\$60,000 – 99,999	83	22.3	1179	32.8
\$100,000 – 149,999	14	3.8	720	20
over \$149,999	13	3.5	388	10.8
Race				
White/Caucasian	302	80.9	3231	89.9
African American/Black	18	4.8	107	3
Asian American/Asian	45	12.1	196	5.5
Latino	2	.5	63	1.8
Other	6	1.6	112	3.1
Parents' Occupations				
Father				
Arts + Humanities	2	.5	50	1.4
Business	80	21.5	1137	31.6
Civil/Military service	11	2.9	297	8.3

Table 1 (continued)

Characteristics	FG (n=373)		NFG (n=3593)	
	n	%n	n	%n
Education	0	0	194	5.4
Engineering	9	2.4	512	14.3
Professional, medical	5	1.3	272	7.6
Sciences	1	.3	52	1.5
Other	246	66	965	26.9
Mother				
Arts + Humanities	1	.3	54	1.5
Business	111	29.8	786	21.9
Civil/Military service	4	1.1	60	1.7
Education	15	4	837	23.3
Engineering	2	.5	16	.5
Professional, medical	27	7.2	482	13.4
Sciences	3	.8	80	2.2
Other	198	53.1	1182	32.9
Disability				
Yes	49	13.1	429	11.9
No	324	86.9	3162	88

Table 2

Overview of Results of All Chi-Square Analyses

Research Question	# of Sections	# of Items	# of Chi-Squares	# of Significant Results
Demographic characteristics	8	48	48	23
Pre-college behaviors	4	49	49	15
Beliefs and values	13	109	109	26
Total	25	206	206	64

number of responses was too low to allow meaningful analysis. The removed sections related to enrollment status and parents' occupations.

Some of the remaining sections had multiple items. For instance, the section concerning financial sources included 20 items. In addition, the data for this section required two analyses. The first analysis explored whether participants received any financial support or no financial support from the various sources listed in the instrument. The second analysis investigated whether the participants received less than \$1500 or \$1500 or more from these various sources.

The number of chi-squares conducted on the data to respond to the question about differences in demographic characteristics was also affected by the removal of five items. The number of responses to these five items was too low to allow meaningful analysis. The items eliminated from the analysis were the ACT scores and four items under the financial sources section (any or no support from spouse, any or no support from Vocational Rehabilitation funds, less than \$1500 or \$1500 or more from spouse, and less than \$1500 or \$1500 or more from Vocational Rehabilitation funds). As a result, there was ultimately a total of 48 chi-squares conducted in the analysis of the data pertaining to demographic characteristics. Table 2 reports the actual numbers of sections, items, chi-squares, and significant results used to answer the three research questions posed in the study.

Results of Analyses of Demographic Characteristics

The results of the 48 chi-square analyses on demographic characteristics by generational status are shown in Table 3. For each characteristic, the number of first generation students and the number of non-first generation students are shown. The table also indicates the chi-square test result, the degrees of freedom, and the alpha value. Any chi-square tests that resulted in alpha values less than .01 were deemed statistically significant.

Table 3
Results of Chi-Square Analysis on Demographic Characteristics by Generational Status
 (N=3966)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Gender (3966)			2.04	2	.360
Male	224	2043			
Female	149	1543			
Age (3940)			2.68	1	.102
18 and younger	285	2869			
19 and older	86	700			
High school GPA (3920)			22.1	4	.000*
A+ or A	84	746			
A-	105	776			
B+	103	1088			
B	55	830			
B- or below	19	109			
SAT and ACT scores					
SAT Verbal (3319)			49.64	3	.000*
Less than 500	55	257			
500 – 590	167	1415			
600 – 690	71	1122			
Greater than 690	12	220			
SAT Math (3325)			14.39	3	.002*
Less than 500	23	162			
500 – 590	145	1161			
600 – 690	112	1343			
Greater than 690	26	353			
Financial sources					
Own/Family Parents (3761)			46.09	1	.000*
Any	314	3312			
None	35	100			

Table 3 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Summer savings (2971)			.01	1	.909
Any	213	2008			
None	73	677			
Other savings (2661)			5.76	1	.016
Any	126	1340			
None	136	1059			
Part-time job/on campus (2460)			29.2	1	.000*
Any	116	627			
None	143	1574			
Part-time job/off campus (2386)			23.98	1	.000*
Any	67	319			
None	181	1819			
Full-time job while in college (2291)			13.77	1	.000*
Any	11	28			
None	225	2027			
Parents (3761)			106.75	1	.000*
Less than \$1500	105	369			
\$1500 or more	244	3043			
Summer savings (2971)			.23	1	.632
Less than \$1500	243	2252			
\$1500 or more	43	433			
Other savings (2661)			2.67	1	.102
Less than \$1500	229	2003			
\$1500 or more	33	396			
Part-time job/on campus (2460)			2.72	1	.099
Less than \$1500	243	2113			
\$1500 or more	16	88			
Part-time job/off campus (2386)			2.94	1	.086
Less than \$1500	239	2096			
\$1500 or more	9	42			
Full-time job while in college (2291)			12.9	1	.000*
Less than \$1500	230	2045			
\$1500 or more	6	10			

Table 3 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Pell Grant (2209)			137.25	1	.000*
Any	112	294			
None	133	1670			
Supp. EOG (2122)			12.42	1	.000*
Any	22	86			
None	197	1817			
State schol/grant (2268)			34.96	1	.000*
Any	93	439			
None	147	1589			
Work-study (2207)			29.67	1	.000*
Any	71	323			
None	159	1654			
Other schol/grant (2411)			.12	1	.729
Any	99	839			
None	149	1324			
Other private (2225)			.24	1	.627
Any	49	398			
None	181	1597			
Other gov't. aid (2102)			2.88	1	.090
Any	17	96			
None	200	1789			
Pell Grant (2209)			59.36	1	.000*
Less than \$1500	197	1848			
\$1500 or more	48	116			
Supp. EOG (2122)			19.71	1	.000*
Less than \$1500	206	1874			
\$1500 or more	13	29			
State schol/grant (2268)			8.12	1	.004*
Less than \$1500	209	1874			
\$1500 or more	31	154			
Work-study (2207)			.11	1	.738
Less than \$1500	220	1900			
\$1500 or more	10	77			
Other schol/grant (2411)			4.53	1	.033
Less than \$1500	207	1678			
\$1500 or more	41	485			
Other private (2225)			1.37	1	.242
Less than \$1500	209	1855			
\$1500 or more	21	140			
Other gov't. aid (2102)			1.61	1	.204
Less than \$1500	204	1807			

Table 3 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
\$1500 or more Stafford (2467)	13	78	60.11	1	.000*
Any	173	861			
None	98	1335			
Perkins (2152)			5.24	1	.022
Any	40	250			
None	176	1686			
Other college loan (2191)			1.35	1	.246
Any	49	369			
None	174	1599			
Other loan (2132)			33.19	1	.000*
Any	58	233			
None	163	1678			
Stafford (2467)			31.60	1	.000*
Less than \$1500	170	1715			
\$1500 or more	101	481			
Perkins (2152)			.19	1	.666
Less than \$1500	203	1833			
\$1500 or more	13	103			
Other college loan (2191)			2.64	1	.104
Less than \$1500	184	1702			
\$1500 or more	39	266			
Other loan (2132)			31.14	1	.000*
Less than \$1500	174	1736			
\$1500 or more	47	175			
Other than above (2055)			.00	1	.998
Any	15	136			
None	189	1715			
Other than above (2055)			.28	1	.598
Less than \$1500	195	1783			
\$1500 or more	9	68			
Parents' Total Income (3602)			208.34	1	.000*
Less than \$60,000	229	976			
\$60-99,999	83	1179			
\$100-149,999	14	720			

Table 3 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Over \$149,999	13	388			
Race					
White/Caucasian (3964)			28.31	1	.000*
Yes	302	3231			
No	71	360			
Black/African American (3964)			3.77	1	.052
Yes	18	107			
No	355	3484			
Asian American/Asian (3964)			25.83	1	.000*
Yes	45	196			
No	328	3395			
Latino (3966)			2.64	1	.104
Yes	11	63			
No	362	3530			
Other (3966)			.01	1	.916
Yes	12	112			
No	361	3481			
Disability (3964)			.45	1	.502
Yes	49	429			
No	324	3162			

*Statistically significant at the $p < .01$ level

There was a total of 23 chi-squares that were statistically significant in the analyses related to demographic characteristics. The significant findings can be grouped into four themes: academic credentials, financial sources, family income, and race.

There were 3 statistically significant differences between first generation and non-first generation students in terms of academic credentials. First generation students were likely to have lower high school grade point averages than non-first generation students. The data analysis also showed that first generation students were likely to have lower Math SAT scores and Verbal SAT scores than non-first generation students.

Significant differences also appeared in the analysis of financial sources data. The financial sources were grouped in four categories. The categories were: own/family, no need to repay, need to repay, and other. Only the fourth group (“other”) did not yield any significant differences.

The data in the own/family group generated six significant results. First generation students were less likely than non-first generation students to get any financial support from parents. First generation students were also more likely than non-first generation students to receive financial support from part-time off-campus jobs. While in college, first generation students were more likely than non-first generation students to get financial support from a full-time job. Non-first generation students were more likely than first generation students to receive \$1500 or more from parents. First generation students were more likely than non-first generation students to earn \$1500 or more by working a full-time job while in college.

There were seven significant results in the second category of no need to repay financial sources. First generation students were more likely than non-first generation students to receive financial support through a Pell grant. First generation students were also more likely to receive

\$1500 or more through a Pell grant. Supplemental Educational Opportunity grants were more likely to be a source of financial support for first generation students than for non-first generation students. First generation students were also more likely than non-first generation students to get \$1500 or more through Supplemental Educational Opportunity grants. The data analyses suggest that first generation students were more likely than non-first generation students to be the recipient of a state scholarship or grant. First generation students were also more likely to receive \$1500 or more through a state scholarship or grant. The College Work-Study Grant program was also more likely to be a source of financial support for first generation students than for non-first generation students.

Four significant differences between first generation students and non-first generation students were found in the analysis of financial sources that need to be repaid. First generation students were more likely to receive financial support through Stafford loans. First generation students were also more likely than non-first generation students to receive \$1500 or more through Stafford loans. Other types of loans were more likely to be used by first generation students to receive financial support. First generation students were also more likely to use other types of loans to get \$1500 or more in financial support.

Analysis of parents' total income also suggested a significant difference between first generation and non-first generation students. First generation students were more likely than non-first generation students to have family incomes of less than \$60,000.

Another demographic characteristic that yielded two significant differences was race. First generation students were less likely to be White/Caucasian than non-first generation students. First generation students were also more likely to be Asian American/Asian than non-first generation students.

Results of Analyses of Pre-College Behaviors

The results of the chi-square analyses of pre-college behaviors by generational status are reported in Table 4. For each behavior, the number of first generation students and the number of non-first generation students is reported. The table also indicates the chi-square test result, the degrees of freedom, and the alpha value. Any chi-square tests that resulted in alpha values less than .01 were deemed statistically significant.

A total of 15 statistically significant differences between first generation and non-first generation students was found in the analyses related to pre-college behaviors. Differences were found in items in each of the four sections included in this research question: high school coursework, college applications, activities/experiences, and time on activities.

Out of the eight subjects listed for high school coursework, significant differences between the two groups of participants were found in three subjects. First generation students were less likely to have met or exceeded the recommended numbers of years of study in English, foreign language, and arts and/or music.

In the analysis of data pertaining to the number of college applications submitted by participants, first generation students and non-first generation students differed significantly. First generation students were less likely to have applied to three or more other schools.

Eight pre-college activities or experiences yielded significant differences between first generation students and non-first generation students. First generation students were less likely to have smoked cigarettes before coming to college. First generation students were also less likely to have drunk beer before matriculating. The analysis also showed that first generation students were less likely to have drunk wine or liquor before arriving on campus. First generation students were less likely than non-first generation students to have performed volunteer work before

Table 4
Results of Chi-Square Analysis on Pre-College Behaviors by Generational Status (N=3966)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
High school coursework					
English (3952)			7.12	1	.008*
Did not meet/exceed	5	13			
Met/exceeded	368	3566			
Foreign Language (3938)			8.05	1	.005*
Did not meet/exceed	8	26			
Met/exceeded	362	3542			
Physical Science (3911)			.58	1	.446
Did not meet/exceed	83	730			
Met/exceeded	289	2809			
Biological Science (3916)			.01	1	.913
Did not meet/exceed	204	1954			
Met/exceeded	168	1590			
Computer Science (3738)			2.50	1	.114
Did not meet/exceed	129	1418			
Met/exceeded	216	1975			
Arts/Music (3849)			18.21	1	.000*
Did not meet/exceed	124	847			
Met/exceeded	235	2643			
Number of additional college applications (3931)					
			40.88	5	.000*
None	134	895			
One	60	497			
Two	73	591			
Three	46	626			
Four	32	405			
More than four	27	545			
Activities/experiences					
Religious service (3932)			5.28	1	.022
Not at all	77	575			
Frequently/occasionally	293	2987			

Table 4 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Bored in class (3944)			5.74	1	.017
Not at all	12	55			
Frequently/occasionally	360	3517			
Demonstration (3900)			.68	1	.410
Not at all	224	2227			
Frequently/occasionally	144	1305			
Tutored a student (3928)			1.20	1	.273
Not at all	127	1328			
Frequently/occasionally	242	2231			
Studied with others (3928)			.00	1	.998
Not at all	43	413			
Frequently/occasionally	328	3152			
Guest in teacher's home (3918)			.18	1	.668
Not at all	267	2628			
Frequently/occasionally	99	924			
Smoked cigarettes (3933)			7.38	1	.007*
Not at all	259	2247			
Frequently/occasionally	110	1317			
Drank beer (3927)			12.14	1	.000*
Not at all	180	1403			
Frequently/occasionally	189	2155			
Drank wine/liquor (3927)			12.09	1	.001*
Not at all	169	1302			
Frequently/occasionally	200	2256			
Felt overwhelmed (3944)			.12	1	.731
Not at all	49	495			
Frequently/occasionally	322	3078			
Felt depressed (3933)			1.29	1	.255
Not at all	147	1525			
Frequently/occasionally	223	2038			
Volunteer work (3930)			8.84	1	.003*
Not at all	88	626			
Frequently/occasionally	281	2935			
Played musical instrument (3929)			13.55	1	.000*
Not at all	249	2063			
Frequently/occasionally	118	1499			

Table 4 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Asked teacher's advice after class (3936)			4.16	1	.041
Not at all	66	497			
Frequently/occasionally	304	3069			
Overslept, missed class or appointment (3943)			1.47	1	.225
Not at all	230	2334			
Frequently/occasionally	140	1239			
Discussed politics (3937)			1.07	1	.301
Not at all	92	805			
Frequently/occasionally	277	2763			
Voted in student election (3931)			3.94	1	.047
Not at all	67	510			
Frequently/occasionally	302	3052			
Socialized with member of another racial/ethnic group (3941)			.02	1	.897
Not at all	6	61			
Frequently/occasionally	365	3509			
Took prescribed anti- depressant (3928)			.13	1	.718
Not at all	357	3441			
Frequently/occasionally	11	119			
Late to class (3925)			1.66	1	.198
Not at all	125	1099			
Frequently/occasionally	241	2460			
Attended public recital or concert (3936)			22.74	1	.000*
Not at all	107	665			
Frequently/occasionally	262	2902			
Visited art gallery or museum (3928)			12.33	1	.000*
Not at all	174	1341			
Frequently/occasionally	196	2217			
Discussed religion (3924)			5.17	1	.023
Not at all	75	558			
Frequently/occasionally	295	2996			
Read editorial page (3928)			.59	1	.444
Not at all	140	1419			
Frequently/occasionally	230	2139			

Table 4 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Checked out book or journal from school library (3937)			.43	1	.514
Not at all	78	805			
Frequently/occasionally	292	2762			
Communicate via email (3922)			13.53	1	.000*
Not at all	89	587			
Frequently/occasionally	280	2966			
Used Internet for research or homework (3937)			5.44	1	.020
Not at all	33	209			
Frequently/occasionally	337	3358			
Participated in Internet chat room (3936)			.17	1	.679
Not at all	157	1469			
Frequently/occasionally	214	2096			
Played computer game (3938)			3.07	1	.080
Not at all	57	681			
Frequently/occasionally	314	2886			
Other Internet use (3920)			.30	1	.586
Not at all	49	507			
Frequently/occasionally	321	3043			
Time spent on various activities					
Studying/homework (3824)			2.89	3	.408
Less than 3 hours	98	988			
3 – 5 hours	122	1029			
6 – 10 hours	76	793			
More than 10 hours	63	655			
Socializing with friends (3803)			9.31	3	.025
Less than 3 hours	25	151			
3 – 5 hours	65	513			
6 – 10 hours	96	914			
More than 10 hours	172	1867			

Table 4 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Exercise or sports (3820)			7.39	3	.060
Less than 3 hours	105	810			
3 – 5 hours	66	621			
6 – 10 hours	74	728			
More than 10 hours	115	1301			
Partying (3811)			14.77	3	.002*
Less than 3 hours	200	1561			
3 – 5 hours	73	820			
6 – 10 hours	54	616			
More than 10 hours	33	454			
Working (for pay) (3816)			12.45	3	.006*
Less than 3 hours	105	1241			
3 – 5 hours	18	224			
6 – 10 hours	40	445			
More than 10 hours	195	1548			
Volunteer work (3816)			2.58	3	.461
Less than 3 hours	289	2792			
3 – 5 hours	38	405			
6 – 10 hours	22	151			
More than 10 hours	11	108			
Student clubs/groups (3811)			1.70	3	.636
Less than 3 hours	261	2407			
3 – 5 hours	57	600			
6 – 10 hours	26	248			
More than 10 hours	16	196			
Watching TV (3822)			20.14	3	.000*
Less than 3 hours	143	1578			
3 – 5 hours	96	1022			
6 – 10 hours	64	552			
More than 10 hours	57	310			
Housework/childcare (3808)			5.64	3	.131
Less than 3 hours	278	2797			
3 – 5 hours	57	487			
6 – 10 hours	16	120			
More than 10 hours	9	44			
Reading for pleasure (3819)			.70	3	.873
Less than 3 hours	293	2762			
3 – 5 hours	43	451			

Table 4 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
6 – 10 hours	14	156			
More than 10 hours	9	91			
Playing video games (3819)			8.56	3	.036
Less than 3 hours	289	2907			
3 – 5 hours	35	308			
6 – 10 hours	17	152			
More than 10 hours	19	92			
Prayer/meditation (3818)			1.15	3	.765
Less than 3 hours	336	3207			
3 – 5 hours	14	180			
6 – 10 hours	5	47			
More than 10 hours	3	26			

*Statistically significant at the $p < .01$ level

entering college. The results showed that first generation students were less likely to have played a musical instrument before coming to campus. First generation students were less likely than non-first generation students to have attended a public recital or concert. Another activity that first generation students were less likely to have experienced was visiting an art gallery or museum. Prior to starting college, first generation students also appeared less likely to have communicated via email than their non-first generation counterparts.

Data analyses of time spent on various activities before coming to college yielded three significant differences between first generation and non-first generation students. First generation students spent fewer hours per week partying than non-first generation students. First generation students also spent more hours per week working for pay. The data suggested that first generation students also spent more hours per week watching television than non-first generation students did.

Results of Analyses of Beliefs and Values

The results of the chi-square analyses of beliefs and values by generational status are reported in Table 5. For each belief or value, the number of first generation students and the number of non-first generation students are reported. The table also indicates the chi-square test result, the degrees of freedom, and the alpha value. Any chi-square tests that resulted in alpha values less than .01 were deemed statistically significant.

A total of 26 statistically significant differences between first generation and non-first generation students was found in the analysis related to beliefs and values. Differences were found in items pertaining to academic expectations, decisions to attend college, personal traits, beliefs about current issues, concern about financing education, and reasons for selecting the institution. Significant differences were also found in items about probable field of study, value

Table 5
Results of Chi-Square Analysis on Beliefs and Values by Generational Status (N=3966)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Highest academic degree					
Ever (3291)			22.71	4	.000*
None, vocational certificate, A.A., or equivalent	5	24			
Bachelor's	95	592			
Master's	133	1473			
Ph.D. or Ed.D.	44	549			
M.D., D.O., D.D.S., D.V.M., LL.B. or J.D., B.D. or M.Div., or other	37	339			
Reasons to attend college					
Parents' wish (3922)			1.79	2	.408
Not important	95	888			
Somewhat important	168	1511			
Very important	108	1152			
Could not find job (3901)			4.61	2	.100
Not important	320	3152			
Somewhat important	32	207			
Very important	17	173			
Get away from home (3922)			4.94	2	.085
Not important	113	914			
Somewhat important	170	1826			
Very important	85	814			
Get a better job (3916)			8.99	2	.011
Not important	18	241			
Somewhat important	34	491			
Very important	317	2815			
Gain general education (3921)			1.01	2	.603
Not important	20	152			
Somewhat important	114	1106			
Very important	236	2293			
Improve study skills (3912)			1.35	2	.509
Not important	53	593			
Somewhat important	186	1726			
Very important	129	1225			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Become more cultured (3918)			1.96	2	.376
Not important	58	467			
Somewhat important	150	1511			
Very important	161	1571			
Make more money (3896)			1.58	2	.455
Not important	12	138			
Somewhat important	65	702			
Very important	291	2688			
Role model/mentor encouraged me (3912)			9.23	2	.010
Not important	170	1896			
Somewhat important	147	1282			
Very important	52	365			
Prove to others I could succeed (3877)			14.56	2	.001*
Not important	111	1282			
Somewhat important	118	1244			
Very important	137	985			
Prepare for graduate or Professional school (3915)			6.85	2	.032
Not important	83	654			
Somewhat important	132	1187			
Very important	152	1707			
Because friends were going (3915)			.44	2	.804
Not important	243	2296			
Somewhat important	107	1052			
Very important	18	199			
Personal traits					
Artistic ability (3931)			8.04	2	.018
Below average	147	1265			
Average	136	1216			
Above average	86	1081			
Athletic ability (3937)			16.43	2	.000*
Below average	71	494			
Average	157	1327			
Above average	143	1745			
Competitiveness (3934)			.13	2	.938
Below average	25	245			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Average	107	1056			
Above average	239	2262			
Cooperativeness (3934)			5.65	2	.059
Below average	6	92			
Average	117	938			
Above average	247	2534			
Creativity (3937)			15.54	2	.000*
Below average	34	289			
Average	165	1248			
Above average	172	2029			
Drive to achieve (3936)			2.89	2	.236
Below average	7	115			
Average	84	873			
Above average	280	2577			
Emotional health (3932)			3.01	2	.222
Below average	15	196			
Average	130	1123			
Above average	224	2244			
Leadership ability (3938)			1.32	2	.518
Below average	27	252			
Average	128	1132			
Above average	216	2183			
Mathematical ability (3937)			17.37	2	.000*
Below average	18	309			
Average	128	912			
Above average	225	2345			
Physical health (3934)			2.58	2	.276
Below average	11	100			
Average	122	1033			
Above average	238	2430			
Popularity (3928)			12.39	2	.002*
Below average	33	230			
Average	202	1704			
Above average	135	1624			
Public speaking ability (3938)			18.45	2	.000*
Below average	128	917			
Average	148	1403			
Above average	95	1247			
Self-confidence (intellectual) (3932)			.64	2	.726
Below average	10	118			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Average	122	1123			
Above average	238	2321			
Self-confidence (social) (3930)			6.80	2	.033
Below average	49	340			
Average	146	1342			
Above average	175	1878			
Self-understanding (3919)			1.06	2	.588
Below average	12	127			
Average	141	1262			
Above average	216	2161			
Spirituality (3925)			2.36	2	.307
Below average	68	690			
Average	160	1392			
Above average	142	1473			
Understanding of others (3930)			9.54	2	.009*
Below average	16	121			
Average	146	1145			
Above average	209	2293			
Writing ability (3932)			16.64	2	.000*
Below average	64	457			
Average	174	1446			
Above average	133	1658			
Future occupation (3791)			10.03	7	.187
Arts & Humanities	7	104			
Business	50	519			
Civil/military service	11	97			
Education	16	113			
Engineering	74	869			
Professional	63	653			
Sciences	20	133			
Other	112	950			
Beliefs					
Courts have too much concern for criminals (3850)			2.53	1	.112
Agree somewhat/strongly	277	2575			
Disagree somewhat/strongly	80	918			
Abortion should be legal (3852)			1.69	1	.194

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Agree somewhat/strongly	214	2230			
Disagree somewhat/strongly	141	1267			
Abolish death penalty (3826)			5.35	1	.021
Agree somewhat/strongly	47	634			
Disagree somewhat/strongly	306	2839			
Consensual sex okay even if do not know partner well (3849)			.01	1	.924
Agree somewhat/strongly	168	1629			
Disagree somewhat/strongly	190	1862			
Legalize marijuana (3850)			4.05	1	.044
Agree somewhat/strongly	114	1300			
Disagree somewhat/strongly	244	2192			
Important to have laws prohibiting homosexual relationships (3841)			8.00	1	.005*
Agree somewhat/strongly	133	1032			
Disagree somewhat/strongly	228	2448			
Employers be allowed to drug test employees/applicants (3865)			12.58	1	.000*
Agree somewhat/strongly	309	2736			
Disagree somewhat/strongly	50	770			
Man not entitled to sex even if he thinks woman "led him on" (3873)			.05	1	.831
Agree somewhat/strongly	325	3174			
Disagree somewhat/strongly	36	338			
Federal government do more to control handgun sales (3861)			5.48	1	.019
Agree somewhat/strongly	267	2789			
Disagree somewhat/strongly	92	713			
Racial discrimination no longer a problem (3872)			.98	1	.322
Agree somewhat/strongly	81	881			
Disagree somewhat/strongly	276	2634			
Individual can do little to change society (3870)			.81	1	.369
Agree somewhat/strongly	105	952			
Disagree somewhat/strongly	253	2560			
Wealthy should pay more taxes than they do now (3839)			20.94	1	.000*

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Agree somewhat/strongly	234	1841			
Disagree somewhat/strongly.	123	1641			
Colleges should prohibit hate speech on campus (3855)			.92	1	.338
Agree somewhat/strongly	213	1976			
Disagree somewhat/strongly	147	1519			
Same sex couples should have right to legal marital status (3837)			1.40	1	.237
Agree somewhat/strongly	171	1776			
Disagree somewhat/strongly	187	1703			
Government should regulate material on Internet (3869)			.24	1	.626
Agree somewhat/strongly	126	1187			
Disagree somewhat/strongly	233	2323			
Concern about financing education (3811)			109.44	2	.000*
None	73	1554			
Some	219	1649			
Major	67	249			
Reasons for selecting institution					
Relatives' wish (3904)			5.48	2	.064
Not important	273	2440			
Somewhat important	78	953			
Very important	15	145			
Advice of teacher (3891)			11.98	2	.003*
Not important	246	2663			
Somewhat important	113	808			
Very important	6	55			
Good academic reputation (3910)			2.44	2	.296
Not important	9	81			
Somewhat important	92	1028			
Very important	265	2435			
Good social reputation (3897)			1.59	2	.452
Not important	56	571			
Somewhat important	175	1780			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Very important	134	1181			
Offered financial aid (3863)			44.64	2	.000*
Not important	172	2258			
Somewhat important	108	788			
Very important	82	455			
Offers special programs (3880)			1.13	2	.569
Not important	173	1755			
Somewhat important	120	1145			
Very important	71	616			
Low tuition (3890)			8.63	2	.013
Not important	102	1178			
Somewhat important	172	1672			
Very important	91	675			
Advice of high school guidance counselor (3877)			16.68	2	.000*
Not important	219	2503			
Somewhat important	123	885			
Very important	18	129			
Advice of private guidance counselor (3856)			5.32	2	.070
Not important	335	3346			
Somewhat important	23	137			
Very important	2	13			
Wanted to live near home (3874)			14.96	2	.001*
Not important	258	2605			
Somewhat important	77	781			
Very important	28	125			
Not offered aid by first choice (3850)			10.38	2	.006*
Not important	316	3183			
Somewhat important	24	216			
Very important	20	91			
Graduates go to top graduate schools (3871)			1.14	2	.565
Not important	103	909			
Somewhat important	153	1519			
Very important	106	1081			
Graduates get good jobs (3889)			.57	2	.751
Not important	25	229			
Somewhat important	107	1106			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Very important	231	2191			
Religious affiliation/orientation (3868)			1.43	2	.489
Not important	306	3034			
Somewhat important	52	429			
Very important	5	42			
Size of college (3884)			1.51	2	.471
Not important	120	1077			
Somewhat important	165	1713			
Very important	79	730			
Not accepted anywhere else (3848)			1.91	2	.386
Not important	342	3262			
Somewhat important	11	133			
Very important	6	94			
National magazine rankings (3878)			.56	2	.755
Not important	165	1560			
Somewhat important	148	1513			
Very important	48	444			
Information in multicollege guidebook (3864)			4.04	2	.133
Not important	209	2018			
Somewhat important	117	1239			
Very important	35	246			
Probable field of study (3881)			23.83	10	.008*
Arts & Humanities	9	145			
Biological sciences	34	320			
Business	54	567			
Education	16	99			
Engineering	92	1028			
Physical sciences	10	75			
Professional	35	382			
Social sciences	14	162			
Technical	14	90			
Other	71	439			
Undecided	17	208			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Value of various accomplishments					
In performing arts (3858)			18.10	1	.000*
Important	65	997			
Not important	296	2500			
Become authority in field (3862)			4.61	1	.032
Important	346	3226			
Not important	17	273			
Recognized by colleagues for contributions in field (3859)			3.21	1	.073
Important	339	3165			
Not important	24	331			
Influence political structure (3850)			.02	1	.889
Important	194	165			
Not important	1873	1618			
Influence social values (3855)			1.37	1	.241
Important	249	2512			
Not important	112	982			
Raise a family (3873)			7.63	1	.006*
Important	320	3232			
Not important	44	277			
Have administrative responsibility for work of others (3843)			5.65	1	.017
Important	311	2832			
Not important	49	651			
Be financially well off (3868)			2.77	1	.096
Important	356	3392			
Not important	6	114			
Help others in difficulty (3861)			.09	1	.760
Important	336	3282			
Not important	24	219			
Make theoretical contribution to science (3856)			3.34	1	.068
Important	230	2060			
Not important	130	1436			
Write original work (3862)			3.28	1	.070
Important	90	1035			
Not important	270	2467			
Create artistic work (3851)			5.58	1	.018

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Important	87	1052			
Not important	273	2439			
Be successful in own business (3855)			2.39	1	.122
Important	267	2464			
Not important	92	1032			
Be involved in programs to clean up environment (3854)			.01	1	.944
Important	236	2304			
Not important	123	1191			
Develop meaningful philosophy of life (3854)			.21	1	.650
Important	271	2600			
Not important	88	895			
Participate in community action program (3847)			.04	1	.837
Important	229	2199			
Not important	131	1288			
Help promote racial understanding (3849)			1.98	1	.159
Important	227	2342			
Not important	131	1149			
Keep current with political affairs (3856)			7.95	1	.005*
Important	236	2544			
Not important	123	953			
Be community leader (3855)			1.73	1	.188
Important	267	2493			
Not important	91	1004			
Likelihood of various experiences					
Change major field (3885)			10.21	1	.001*
Some/very good chance	139	1658			
Very little/no chance	224	1864			
Change career choice (3883)			6.68	1	.010
Some/very good chance	170	1904			
Very little/no chance	192	1617			
Fail one or more courses (3874)			.83	1	.361
Some/very good chance	45	380			
Very little/no chance	318	3131			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Graduate with honors (3869)			3.24	1	.072
Some/very good chance	309	2869			
Very little/no chance	52	639			
Be elected to student office (3866)			.07	1	.797
Some/very good chance	74	741			
Very little/no chance	286	2765			
Get job to help pay college expenses (3869)			23.66	1	.000*
Some/very good chance	292	2404			
Very little/no chance	69	1104			
Work full-time while attending college (3864)			30.76	1	.000*
Some/very good chance	81	424			
Very little/no chance	280	3079			
Join social fraternity, sorority, or club (3865)			1.55	1	.214
Some/very good chance	200	2060			
Very little/no chance	161	1444			
Play varsity/intercollegiate athletics (3870)			2.66	1	.103
Some/very good chance	117	1297			
Very little/no chance	242	2214			
Be elected to academic honor society (3857)			.42	1	.517
Some/very good chance	193	1943			
Very little/no chance	166	1555			
Make at least a "B" average (3878)			.99	1	.319
Some/very good chance	356	3428			
Very little/no chance	6	88			
Need extra time to complete degree requirements (3857)			1.00	1	.319
Some/very good chance	153	1396			
Very little/no chance	206	2102			
Earn bachelor's degree (3862)			.81	1	.369
Some/very good chance	347	3374			
Very little/no chance	10	131			
Participate in protest or demonstration (3857)			.07	1	.790

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Some/very good chance	85	809			
Very little/no chance	273	2690			
Drop out temporarily (3863)			.12	1	.727
Some/very good chance	9	99			
Very little/no chance	350	3405			
Transfer (3851)			.25	1	.618
Some/very good chance	68	700			
Very little/no chance	291	2792			
Be satisfied with college (3860)			.00	1	.973
Some/very good chance	351	3422			
Very little/no chance	8	79			
Get married (3853)			2.31	1	.128
Some/very good chance	74	604			
Very little/no chance	287	2888			
Participate in volunteer or community service (3863)			2.74	1	.098
Some/very good chance	214	2250			
Very little/no chance	144	1255			
Seek personal counseling (3861)			.02	1	.895
Some/very good chance	66	634			
Very little/no chance	293	2868			
Computer experience (3760)			7.24	2	.027
None to novice	64	505			
Familiar	159	1434			
Experienced to expert	126	1472			
Expect to learn more from courses using computers (3758)			2.07	2	.356
Strongly agree to agree	292	2754			
Disagree	19	231			
Don't know/no opinion	37	425			
Expect courses using computer to be more challenging (3749)			10.15	2	.006*
Strongly agree to agree	220	1847			

Table 5 (continued)

Characteristic (n)	FGs n	NFGs n	Chi-square	df	p
Disagree	76	912			
Don't know/no opinion	52	642			

*Statistically significant at the $p < .01$ level

of various accomplishments, and likelihood of various experiences. Out of three sections concerning technology use in education, one section yielded a significant difference between the two groups of students.

One item asked students to indicate the highest academic degree they expected to earn. First generation students were less likely to expect to earn a masters or doctorate degree than non-first generation students.

Out of 12 items concerning the decision to attend college, only one item yielded a statistically significant difference between first generation and non-first generation students. First generation students were more likely to indicate that one of the reasons they decided to attend college was to prove to others that they could succeed.

Seven items pertaining to personal traits suggested significant differences between first generation and non-first generation students. First generation students were more likely to consider themselves average or below average in athletic ability. First generation students were also more likely to consider themselves average or below average in creativity. Analysis of the data also indicated that first generation students were less likely than non-first generation students to consider themselves below average in mathematical ability. Within this item first generation students also showed more likelihood to consider themselves average and less likely to consider themselves above average in mathematical ability. Data about students' beliefs about their popularity revealed a similar result. First generation students were less likely to consider themselves below average, more likely to consider themselves average, and less likely to consider themselves above average in terms of popularity than non-first generation students. First generation students were also more likely to consider themselves average or below average in regard to public speaking ability. The analysis indicated that first generation students were

more likely to consider themselves average or below average in understanding others. In terms of writing ability, first generation students were more likely to consider themselves average or below average.

The section that asked students to indicate their beliefs about various current issues provided three significant differences between first generation and non-first generation students. First generation students were more likely to agree somewhat or strongly with the belief that it is important to have laws prohibiting homosexual relationships. First generation students were also more likely to agree somewhat or strongly with the belief that employers should be allowed to drug test employees and applicants. Compared to non-first generation students, first generation students were more likely to agree somewhat or strongly with the belief that wealthy people should pay more taxes.

First generation students and non-first generation students also differed in their concern about financing their education. First generation students were more likely to have some or major concern about finances than non-first generation students.

There were five reasons for selecting the institution in which the two groups of students differed significantly. First generation students were more likely to indicate that the advice from a teacher was somewhat important. First generation students were also more likely to report that being offered financial aid by the institution was somewhat to very important. The analysis showed that first generation students were more likely to say that the advice of a high school guidance counselor was somewhat to very important. First generation students were more likely than non-first generation students to indicate that the desire to live near home was very important. Not being offered financial aid by their first choice of schools was more likely to be somewhat to very important to first generation students than to non-first generation students.

The two groups of students differed significantly in their beliefs concerning their probable fields of study. First generation students were less likely to choose majors in Arts and Humanities, Business, Engineering, Professional Studies, Social Science, and Undecided. First generation students were more likely to select a major in Biological Sciences, Education, Physical Science, Technical, or Other.

In reviewing 19 items, first generation and non-first generation students reported differing assessments on the value of three accomplishments. First generation students were less likely to consider it important to have an accomplishment in the performing arts. First generation students were also less likely than non-first generation students to consider raising a family an important accomplishment. Analysis of the data suggested that first generation students were less likely to consider keeping up with political affairs important.

Three significant differences were found between first generation and non-first generation students in terms of the likelihood they would encounter certain experiences. First generation students were less likely to think there was some to a very good chance they would change their major field. First generation students were also more likely to think there was some to a very good chance that they would get a job to help pay college expenses. Related to that item, first generation students were more likely to think there was some to a very good chance that they would work full-time while attending college.

When asked whether courses requiring computer use would be more challenging than traditional courses, first generation and non-first generation students differed significantly in their answers. First generation students were more likely to agree or strongly agree with the belief that such courses would be more challenging than traditional courses.

Conclusion

Examination of the results of the chi-square analyses provided the necessary information to answer the three research questions posed in the study. Upon review of the 48 chi-squares conducted concerning demographic characteristics, there were only 23 tests that were statistically significant. The a priori decision rule to determine whether there were significant differences between FGs and NFGs was that more than 50% of the chi-squares would yield significant differences in order for the researcher to conclude that there were differences between the two groups on any given topic. Therefore, the researcher concluded that there was not a significant difference between FGs and NFGs in terms of demographic characteristics.

A review of the 48 chi-squares conducted in regard to the research question about pre-college behaviors revealed 15 significant results. Consequently, there is not a significant difference between first generation students and non-first generation students in regard to pre-college behaviors.

Upon review of the sections pertaining to beliefs and values, only 26 out of 109 items yielded significant differences between first generation and non-first generation students. This would suggest there was not a difference between FGs and NFGs in terms of beliefs and values.

Despite the failure to find significant differences between the two groups of participants, the findings of the study do reveal some interesting patterns. These patterns, and their implications for future practice and research are discussed in the final chapter of this study.

Chapter Five

Discussion

This study examined the demographic characteristics, pre-college behaviors, and beliefs and values of first generation and non-first generation students. The data collected through the administration of the Annual Freshman Survey were analyzed by the calculation of chi-square tests to determine any statistically significant differences between the two groups of students in terms of these research questions.

This chapter discusses the study's results and implications. The first section discusses the results of the study. The second section of the chapter is a discussion of the relationship of the results of this study to prior studies. The third section of this chapter looks at the implications for future practice based on the study's findings. Next, the chapter presents a discussion of the implications for future research suggested by this study. Limitations of this study are also included in this chapter. Finally, some general conclusions are drawn.

Discussion of the Results

Examination of the results of the study is based on the three research questions. Overall patterns of the study's findings are also discussed.

Demographic findings

The first research question posed in the study related to demographic characteristics. The findings in respect to demographic characteristics of first generation and non-first generation students offered practical significant differences. The majority of such differences dealt with financial issues. There were also differences between the two groups of students in terms of academic issues and race.

First generation students were found to differ from non-first generation students in terms of parents' total income. The data suggested that first generation students were more likely to have family incomes of less than \$60,000. This finding sets the stage for many of the differences found between the two groups in terms of sources of financial support and other financial matters.

According to the study, first generation students were less likely than non-first generation students to receive financial support from their parents. First generation students were more likely to receive financial support from their own efforts such as part-time jobs on campus, part-time jobs off campus, and full-time jobs while in college. Financial sources that did not require repayment were more likely to be used by first generation students (e.g. Pell grants, Supplemental Educational Opportunity grants, state scholarships and grants, and college work-study grants). First generation students were also more likely to make use of sources that did require repayment, such as Stafford loans and other loans. The findings offered a picture of first generation students as being more likely to have to rely on themselves or sources other than their parents for financial support.

Another area of demographic characteristics in which first generation and non-first generation students differed was entering academic credentials. First generation students were more likely to have lower high school GPAs than their non-first generation counterparts. First generation students were also more likely to have lower Math and Verbal SAT scores than non-first generation students. These findings suggest first generation students are coming to college less prepared for the academic demands they will find.

The third section that revealed significant differences between the two groups of students was race. First generation students in this study were less likely to be Caucasian. First generation

students were also more likely to be Asian American or Asian. If first generation students are more likely to be members of a minority group, they may face additional challenges to their academic success that extend beyond generational status.

Pre-college behavior findings

In terms of pre-college behaviors, first generation students were found to differ from non-first generation students in a number of specific items. The college search process, high school coursework, certain activities and experiences, and the amount of time spent on certain activities provided significant differences between the two groups.

The two groups of students were not the same in regard to the number of college applications they submitted during their college search. First generation students were less likely to have applied to three or more other schools. This finding could reflect less familiarity with the college search process or fewer options due to factors related to their generational status such as economic background or high school preparation.

First generation students were less likely to have met or exceeded the recommended number of courses in English and Foreign Languages. First generation students were also less likely to have taken enough Arts and/or Music courses during their high school years. The strength of the high schools attended by first generation students could be a reason for this difference between the two groups of students. If they attended less academically rigorous high schools, first generation students may be less likely to take certain classes. Another possibility is the lower level of understanding the importance of planning for college early in a student's high school career. First generation students may choose their classes one year at a time, not realizing that the class they choose as a ninth grader can impact on what class they can take as a senior. For instance, if a student chooses pre-algebra instead of algebra as a ninth grader he may not

have enough time to take the subsequent math classes so he can take calculus as a twelfth grader. Another possible explanation could be that first generation students might not be as certain as to whether they will be able to attend college, thus postponing the selection of appropriate high school coursework.

The lower level of Arts and/or Music courses could possibly be connected to the findings between first generation and non-first generation students in terms of pre-college activities and experiences. In the findings concerning pre-college behaviors, the data suggested that first generation students were less likely to have played a musical instrument, visited an art gallery or museum, or attended a public recital or concert. Such opportunities may not have been available in the schools or communities from which the first generation students came. Another possible explanation could be that first generation students' economic situation might require them to spend more time working when not in school rather than pursuing such activities.

First generation students differed from non-first generation students in terms of several social behaviors as well. First generation students were less likely to have smoked cigarettes before arriving on campus. The data also indicated that first generation students were less likely to have drunk beer, wine, or liquor during high school. Such activities require money that first generation students may not have for such purposes. Such activities also can be associated with free time which might not have been as plentiful for first generation students who worked more while in high school than their non-first generation counterparts..

Only one activity related to computer usage revealed a significant difference between the two groups of students. While no significant differences were found in terms of using the Internet for homework or research, chat rooms, or playing games, first generation students were less likely to have communicated via email before coming to college. This finding could suggest

that first generation students were less likely to have access to a computer for personal use. That is, use of the Internet in school might have been possible, but if the student did not have a computer at home or a home computer connected to the Internet, then use of that computer for personal business like email may be less likely.

Several differences between first generation and non-first generation students were found in the amount of time spent in various activities. First generation students were likely to spend fewer hours per week partying. On the other hand, first generation students were likely to spend more hours per week working for pay. These findings further depict first generation students as being more concerned with financial matters than their non-first generation counterparts. First generation students also were likely to spend more hours per week watching television than non-first generation students. The selection of this recreational activity could be due to the fact that such an activity would not cost the student any money.

Beliefs and values findings

The results of this study also showed differences between first generation and non-first generation students in terms of beliefs and values. Beliefs and values concerning academic issues, various current issues and personal matters reflected differences between the two groups.

First generation students expressed different expectations in terms of academic accomplishment than their non-first generation counterparts. First generation students were less likely to expect to earn a master's or doctoral degree. This finding could be a reflection of the fact that a baccalaureate degree is new territory for first generation students and their families and is a substantial accomplishment in itself. This may constrain any thoughts of success beyond the bachelor's degree.

Changing their major field was something that first generation students were less likely than non-first generation students to view as possible. The selection of a specific major might be a critical element in first generation students' motivation to break from family tradition and pursue a college degree. For example, being a teacher might have been a driving force throughout the first generation student's high school career and consequently the student is not considering changing this goal. Another possible explanation for this finding might be the first generation students' lack of familiarity with the various choices of majors available to them. Either scenario would limit the likelihood of first generation students reporting plans to change majors.

The probable field of study revealed differences between the two groups of students as well. First generation students were less likely to expect to major in the Arts and Humanities, Business, Engineering, Professional, Social Science, or to be Undecided. The lower degree of experience with the Arts could be seen as a contributing factor to first generation students' belief that they would not major in that field. Lower entering academic credentials could contribute to first generation students' belief that they would not pursue an Engineering degree. Their belief that they will not change their major supports the finding that first generation students are less likely to be undeclared majors.

Financial matters provided an area of differing values and beliefs between first generation and non-first generation students. For instance, first generation students were more likely to be concerned about financing their education. This finding is consistent with earlier findings about the prominence of financial matters in first generation students' lives. For example, having to find a job or earn a scholarship could contribute to first generation students' concern about financing their education.

In terms of reasons for selecting the institution, first generation students were more likely to cite the offer of financial aid as an important factor. Not being offered financial aid by their first choice school was also more likely to be rated by first generation students as important. Again, the fact that first generation students are not relying on their parents to pay for their education would mean that financial aid is a very important factor.

Additionally, first generation students were more likely to indicate that their desire to live near home was an important factor in selecting the institution. This finding is in keeping with the other data suggesting first generation students have more concerns about financial issues than non-first generation students. Living near home could save money on living and traveling expenses. Also, being near home may mean being near an existing job which would spare first generation students from conducting a job search after enrolling in college.

Further evidence of the importance of work availability is found in two other items. First generation students were more likely to report there was a chance they would get a job to help pay college expenses. First generation students were also more likely to think there was a chance they would work full-time while attending college.

The central issue of finances could also explain other findings of the study. First generation students were more likely to believe that wealthy people should pay more taxes than they do now. Perhaps first generation students look at the issues of taxes and financial aid as being linked.

First generation students were also less likely to consider raising a family as an important accomplishment. It is possible that first generation students view their education as more special and raising a family as something more commonplace.

Perceptions of self provided evidence of differences between first generation and non-first generation students. The study showed that first generation students were less likely to consider themselves above average in regard to mathematical ability. First generation students were also more likely to consider themselves average or below average in terms of writing ability. The fact that first generation students have lower high school GPAs and report lower SAT scores may corroborate their feelings of lesser abilities.

First generation students were also more likely to consider themselves average or below average in terms of creativity and public speaking ability. These areas do not have a standardized measure such as high school GPA by which to assess the accuracy of this finding. However, the apparent lack of exposure to the arts and music for first generation students could explain the lower perceptions of their creativity and public speaking ability.

The results of this study indicated that first generation students were more likely to consider themselves average or below average in terms of athletic ability. First generation students' need to work after school might keep them from participating in school or recreational sports.

First generation students were more likely to consider themselves average or below average in their understanding of others. This finding could reflect a level of discomfort or disconnection at the time of the study (summer orientation). The unfamiliarity of college life could have been very much on their minds at the time data were collected and thus could have influenced the first generation students' response.

First generation students' appraisal of their popularity could also have been affected by the timing of the study. First generation students were less likely to consider themselves above average in terms of popularity. Again, the adjustment period for first generation students to

college could strain the students' self-confidence and cause them to feel out of place and not well-liked.

The findings also gave insight into first generation students' beliefs and values concerning the role of others in their lives. First generation students were more likely to say that they decided to attend college to prove to others that they could succeed. This result could be related to the fact that first generation students are, by definition, breaking the norm. By attending college they are making an important statement about their beliefs in themselves and their goals that dramatically differ from many people around them. The desire to prove themselves worthy of this opportunity could take one of two forms. First generation students may feel pressure to prove some wrong (those who did not believe they could do it) and others right (those who encouraged them).

First generation students were also more likely than non-first generation students to indicate that the advice of a teacher or high school guidance counselor was somewhat important in selecting the institution. In both cases, the lack of parents with college experience could cause first generation students to seek (or need) other sources of information and inspiration.

A review of the results of this study reveals information about students' opinions of various accomplishments. In this study, first generation students were less likely to consider it important to make an accomplishment in the performing arts. This finding could be related to the students' lower degree of experience with or exposure to the arts and their reported lower opinion of their own creativity.

Another possible future accomplishment that first generation students were not as likely to regard as important was keeping up with political affairs. This could be a reflection of first generation students having more concern with personal matters such as financing their education

and proving to others that they can succeed. This might reflect a lack of interest in people or events to which first generation students do not feel connected.

This study also found that first generation students were more likely to indicate it was important to have laws prohibiting homosexual relationships. Such a finding suggests that first generation students' personal beliefs do not approve of homosexual relationships. The study did not offer other opportunities to further explore this issue.

First generation students also were more likely to report a belief that employers should be allowed to drug test employees and applicants. This response could be connected to the finding that first generation students were less likely than their non-first generation counterparts to have smoked or consumed alcoholic beverages before coming to campus. Another related finding could be the need by first generation students to work in order to afford college. Both of these circumstances could result in first generation students taking a more serious approach to the issue of drugs and alcohol in the workplace.

The study also looked into possible differences between first generation and non-first generation students in regard to their beliefs about technology. The only section that revealed a significant difference dealt with how challenging classes using computers would be. First generation students were more likely to agree with the statement that classes using computers were more challenging than traditional classes. This difference between the two groups of students could be a result of first generation students coming from high schools that did not offer as much access or exposure to computers or from homes without computers.

Overall patterns of the results

Overall, the results of the study fell into primarily two groups. The majority of the results related to financial/economic issues either outright or in the root of the findings. The second

group of results had a central theme of social issues. These themes could be found in results related to all three research questions.

The predominant theme of the findings dealt with financial/economic matters. First generation students were more likely to have parents with lower incomes than the parents of non-first generation students. From this basic difference stemmed other differences of the two groups in terms of their financial situation. First generation students were more likely to be concerned about how to finance their education because it was unlikely their parents would be able to financially support them. First generation students were more likely to hold summer jobs, part-time and full-time jobs while in school. They were also more likely to rely on scholarships, grants, work-study, federal and state loans, and other loans to pay for their education. The fact that first generation students were more likely to have worked after school while in high school can be linked to financial/economic matters.

Other findings are rooted in financial issues even though they may not appear so on the surface. For instance, first generation students were less likely to have communicated via email before attending college. This difference could be explained by first generation students not being able to afford personal computers and Internet access at home. First generation students were less likely to expect to earn a masters or doctoral degree, a finding that could be a result of lack of financial ability to pay for a graduate degree program or a need to get a job immediately after earning a baccalaureate degree.

A second theme of the findings is social issues. The differences in entering characteristics of first generation students can be attributed to social factors. First generation students may not be as well prepared for entrance exams as their non-first generation counterparts. School teachers and guidance counselors may not be encouraging first generation students or providing them

with the support necessary to succeed academically. Lack of role models may be affecting first generation students' decisions and experiences in high school that negatively impact on their performance in classes and on standardized tests.

Race may also be a factor in the findings of the study. First generation students are less likely to be White/Caucasian than non-first generation students. First generation students are also more likely to be Asian/American or Asian than their non-first generation counterparts. It is possible that the dominant culture influences first generation students' belief in themselves and the expectations of the higher education experience.

A difference in the way the two groups of students are involved in the arts and/or music can also be linked to a social issue. First generation students may be socialized to not see a value in such activities and therefore do not pursue them.

Overall patterns of financial/economic issues and social issues are found in the findings of this study. An examination of prior studies provides a context in which to place these findings.

Relationship of the Results to Prior Studies

The findings of this study are useful when compared to prior studies. There were previous studies that are supported by the results of this study. At the same time, there were also previous studies that were contradicted by the results of this study.

Prior studies supported by the results of this study

Results for the research question investigating demographic characteristics contained findings that supported prior studies. The current study reported that first generation students' overall family incomes that were lower than non-first generation students' families. This finding agreed with the work of previous studies (Billson & Terry, 1982; Inman & Mayes, 1999; Terenzini et al., 1995; Ting, 1998).

Previous research had found that first generation students were likely to work more hours per week in off-campus jobs than non-first generation students (Billson & Terry, 1982; McGregor et al., 1991; Terenzini et al., 1995). This finding was consistent with the reported expectation of first generation students in the current study who expect to work more than their non-first generation counterparts.

An earlier study showed a significant difference between the two groups of students in terms of combined SAT scores (Riehl, 1994). This study supported that research by finding a significant difference in the Math and Verbal SAT scores between the two groups.

The present findings on high school GPA also proved similar to previous research. Riehl (1994) reported that first generation students' GPAs were significantly lower than non-first generation students' GPAs. The results of this study agreed with Riehl's finding.

Results for the research question pertaining to pre-college behaviors also revealed findings that supported prior studies. Earlier research reported that first generation students spent less time in social activities with their friends than non-first generation students (Terenzini et al., 1995). This study yielded a similar finding.

The number of college applications submitted by the two groups of students was another pre-college behavior explored by a previous study. First generation students were found to be less likely to have applied to more than one school during the college search process (Pratt & Skaggs, 1989). The current study also found this to be the case.

The results that examined the values and beliefs of first generation students in comparison to non-first generation students also supported prior studies. Inman and Mayes (1999) reported that first generation students consider proximity to home as an important

criterion in choosing a college. This study also found first generation students more likely to say that wanting to live near home was very important.

Prior research also suggested that first generation students were less likely than non-first generation students to expect to earn a masters or doctoral degree (Pratt & Skaggs, 1989; Riehl, 1994; Terenzini et al, 1995). In the current study, first generation students also indicated a lower level of expectation compared to their non-first generation counterparts.

An earlier study had suggested that first generation students have a higher degree of certainty that they have selected the correct academic major (Terenzini et al., 1995). The findings of this study also found that first generation students were less likely to believe they would change their major.

Social acceptance or popularity was another issue that has been explored in a prior study. McGregor et al. (1991) found first generation students were less likely to perceive themselves as socially accepted than non-first generation students. The results of the current study also showed that first generation students were less likely to consider themselves above average in popularity. The same study by McGregor et al. (1991) reported that first generation students considered themselves much less creative than their non-first generation counterparts. The present study also revealed that first generation students were more likely than non-first generation students to think of themselves as average or below average in creativity.

Prior studies were supported by results of this study. Findings of this study were also found that contradicted previous research.

Prior studies contradicted by the results of this study

Results for the research question investigating demographic characteristics yielded findings that contradicted prior studies. In terms of race, previous research indicated that first

generation students were more likely to be Hispanic than non-first generation students.

Additionally, the same study found no other significant differences by race between the two groups (Terenzini et al., 1995). The current study found there were differences between the two groups in regard to Whites/Caucasians and Asian/Americans or Asians. First generation students were less likely to be White/Caucasian. It was also found that first generation students were more likely to be Asian/American or Asian.

This study also contradicted prior studies in terms of gender. Earlier research found first generation students were more likely to be female than non-first generation students (Inman & Mayes, 1999; Terenzini et al., 1995). The current study found no significant difference between the two groups of students in regard to gender.

Previous research also revealed a difference between the two groups of students with regard to age. The studies showed first generation students were more likely to be older than non-first generation students (Inman & Mayes, 1999; Terenzini et al., 1995). In the present study, there was no significant difference between first generation and non-first generation students in terms of age.

The results pertaining to pre-college behaviors also included findings that contradicted prior studies. Earlier research suggested that parents predominated in the process of selecting a college when compared to teachers and counselors (Carnegie Foundation for the Advancement of Teaching, 1986; MacDermott et al., 1987; Olson & Rosenfeld, 1984a). In this study, there was no difference in terms of the parents' role in selecting the institution. There was, however, a difference in terms of the roles of teachers and high school counselors. In this study, first generation students were more likely than non-first generation students to indicate that the advice of a teacher was somewhat important in selecting the school. Additionally, first generation

students in this study were more likely to say that the advice of a high school counselor was somewhat to very important in choosing the school.

Another issue upon which prior studies and the current study differed was the highest degree students believed they would seek at their present institution. Previous research indicated that non-first generation students aspired to earning a higher level degree at their current institution (Pratt & Skaggs, 1989; Riehl, 1994; Terenzini et al., 1995). This study found no significant difference between the two groups of students on this issue.

An earlier study reported that non-first generation students indicated a greater likelihood of transferring to another school than did first generation students (Pratt & Skaggs, 1989). In this study, the results showed no significant difference in the expectation to transfer.

Expectations of academic achievement were examined in a prior study. Riehl (1994) found that first generation students had lower expectations of first semester grades than non-first generation students. The current study found no difference between the two groups of students in terms of expecting to graduate with honors, earn at least a B average, or fail one or more classes.

Previous research and the current study also differed in findings concerning how long students expected to take in order to complete their degree. Terenzini et al. (1995) found that first generation students believed that it would take them more time to complete their degree program than non-first generation students. However, the results of this study reported no significant difference between the two groups in terms of the time they would need to complete their degree program.

The current study contradicted a prior study that found no significant difference between first generation and non-first generation students in terms of personal beliefs about their athletic ability (McGregor et al., 1991). This study found that first generation students were more likely

than non-first generation students to consider themselves average or below average in athletic ability. A similar contradiction occurred between the same previous study and the current study. McGregor et al. (1991) reported no significant difference between the two groups of students' personal beliefs about their mathematical ability. This study, however, found that first generation students were less likely to consider themselves above average in mathematical ability than non-first generation students.

In general, then the present study both supports and contradicts prior research on the topic of first generation students. Additionally, while the study found that there were not sufficient differences between first generation and non-first generation students in enough sections within any one research question to conclude that the two groups differed, there were instances of significant differences within the sections that have implications for future practice as well as that warrant further study.

Implications for Future Practice

The patterns exhibited in the results of this study have implications for a number of constituencies involved with first generation students. Higher education administrators, secondary education administrators, parents, and first generation students can use the findings.

Higher education administrators

One of the primary goals of higher education is to be accessible to its citizens. There is also a need to work on retaining students once they are enrolled. To serve these goals, staff in several departments in higher education can use the results of this study to improve professional practice.

The results of this study showed the critical role financial issues play in the first generation students' interactions with higher education. Consequently, the staff in admissions

departments could look at this study to better understand the issues that impact on first generation students. If first generation students tend to look primarily at institutions that are close to home, then admissions staffs will need to reach out to first generation students who live farther away. There could be programs and information included in college fairs that are targeted towards first generation students. Such efforts would include detailed information about financial aid and work opportunities.

The financial aid and scholarship staff should also look to this study to gain a better understanding of first generation students. Given an understanding of these results, staff could create a pamphlet that pertains specifically to assistance available for first generation students. Such a pamphlet should be presented in a manner that is easy to understand. The pamphlet should also encourage first generation students to ask questions and encourage them to understand that many students participate in various financial aid programs. Such information might make the issue of financial aid less intimidating to first generation students and make them more comfortable with their financial status.

Academic advisors could also benefit from the results of this study. They could gain a better understanding of first generation students' concerns and challenges. First generation students are more likely to enter college with lower entering credentials. Such students, therefore, should be given the attention to help them address those areas of weakness. Advisors should connect first generation students with available academic support programs. The findings concerning first generation students' ideas about their choice of majors would suggest that advisors should guide them to work with staff in the career services department. Academic advisors should also be sensitive to the fact that first generation students considered teachers and

counselors as important resources prior to arriving at college. It is likely that first generation students will look towards their academic advisors to fill a similar role while in college.

Academic advisors could also provide more information about graduate programs to their first generation students. Such encouragement might prompt greater numbers of first generation students to aspire to graduate and professional degrees.

Staff in career services departments should consider this study in designing programs for first generation students. They could help by educating these students about the various majors and career options available to them. Such services might enable first generation students to be more flexible in changing their major, especially if they encounter academic difficulties in that major or become dissatisfied with it.

Career services could also help first generation students find jobs. The results of the study suggest that working while in college is important to first generation students. By helping students find jobs while in school, staff might ease some of the financial concerns of first generation students.

Academic support staff could also use the results of this study. They could be proactive by contacting first generation students as they enter the college, informing them of various support programs. The staff could implement a mentoring program to provide first generation students with a faculty or staff member to provide them with additional support and information. Another type of mentoring program that could be very helpful would be a peer mentoring program. First generation students who have successfully negotiated the college transition process could provide a vital link to the academic success of newly admitted first generation students.

Academic support staff could also offer a first-year transition class to educate first generation students about various topics such as talking with faculty, time management skills, and study skills. Such a program might facilitate the transition of first generation students to college.

Secondary schools administrators

The present study also had implications for those who work in secondary schools. Teachers, guidance counselors, and administrators can benefit from the results of this study. Information about financial aid, scholarships, and grants should be made easily available to first generation students. High school staff could offer workshops for parents and students to explain financial aid programs and how to apply for financial aid. Such programs might educate first generation students and their parents about how to fund higher education and encourage first generation students to pursue postsecondary opportunities.

The finding that first generation students considered the advice of high school teachers and counselors important in selecting their college demonstrates the importance of teacher and counselor involvement with first generation students. The findings revealed that first generation students were less prepared in several areas of coursework. Teachers and counselors could begin their efforts with first generation students early in the students' high school career so there would be enough time to take all the courses necessary for a successful transition to college. School staff could make presentations to parents and students as they begin the ninth grade that show how important it is to start planning for college early.

School staff should also note the findings related to first generation students and the arts and music. To expand exposure to these topics, high school teachers could look for ways to integrate art and music into their courses. For instance, an American history class could include a

visit to a museum to view artwork of the Revolutionary War. Schools could also find alternative ways to provide musical instruments to students such as through corporate donors. Such efforts might enhance the exposure of first generation students to areas they do not explore on their own or with their families.

Parents of first generation students

Parents of first generation students could use the results of this study. First, they could gain a better understanding of the challenges and issues facing their children. They could also take the results to their children's schools to stimulate conversations about things that can be done to help their children pursue a college education.

The study identified financial/economic issues as playing a vital role in first generation students' college experience. Parents could talk to schools, colleges, loan institutions, and financial aid representatives to learn what they need to know to avail themselves of these programs. The insight gained by studying these results could help parents of first generation students serve as a support system in spite of the fact that they did not attend college themselves.

First generation students

The results of this study also can be useful to first generation students. They may gain a better understanding of how they differ from non-first generation students and how that impacts their pre-college and college experiences. By explaining the overall patterns of financial/economic and social differences between first generation and non-first generation students, the study can help first generation students be better prepared for what lies ahead. First generation students can use the results to understand that there are large numbers of first generation students in college and that they are not alone in their situation.

Such knowledge might empower first generation students with the confidence to know that they can find people and information to help them be successful.

The current study provided valuable information to different groups of people to help first generation students access and succeed in higher education. But while the results add to the information base, they do not answer all the questions about first generation students. Future research is needed to provide more information.

Implications for Future Research

Based upon the work of earlier research and the results of this study, there are a number of ways future research could expand upon the body of knowledge about first generation students. For example, this study used data collected before first generation students matriculated to college. Subsequent studies could track first generation students longitudinally to see if beliefs and values change over time. Such a study would contribute to the database by providing information about how first generation students' beliefs and values change over time.

Another future study could examine first generation students in terms of their employment during the school year. This study showed that first generation students are more likely than non-first generation students to have an on-campus or an off-campus job. First generation students working in on-campus jobs could be compared to first generation students working off-campus jobs in regard to their academic success. Such a study could contribute to the database by providing information about job settings and academic success for first generation students.

This study used data collected at a Research I university. A future study could use data collected from a historically Black college or university or a community college. Such a study

could contribute to the database by offering information about first generation students at a different type of institution.

Future research could also look at first generation students qualitatively. This study employed quantitative data to draw conclusions about first generation students. Subsequent studies could use qualitative methods such as focus groups to gather information about first generation students' beliefs and values. Such a study could add to the knowledge base by providing richer data about first generation students' beliefs and values.

Limitations

As in all research, this study had limitations. One such limitation was the type of data employed in the analysis. By relying on quantitative data, the study was restricted to findings based on the pre-determined response options on the instrument. A study that allowed students more flexibility in their responses might have provided different results.

Another limitation of this study was the timing of the administration of the instrument. In this study, participants completed the survey as part of an orientation process. It is possible that the respondents were distracted by other events and did not put as much thought or effort into responding to the survey. Administering the survey at another time might produce different results.

This study was also limited in its sampling. It is possible that first generation students might be less likely to attend an orientation program. If that were the case, then the sample might have been distorted which could skew the results.

Another sampling limitation could be found in the students enrolled at this particular institution. The student population at the institution involved in the study was more traditional in age, enrollment status, and race than the general student population in higher education. The

students also came from families with higher incomes than is typically found in the general student population in higher education. Consequently, the results of the study may be specific to this institution.

The location of the institution involved in this study could also pose a sampling limitation. Being located in a rural area, the type of students enrolling at this school could differ in some important way from students enrolled at other schools. If so, the results might have been skewed.

The study was worthwhile in spite of these limitations. The findings strengthened results of several earlier studies while raising questions about findings of other studies. The apparent contradictions should motivate future research to examine those areas more closely.

The knowledge base concerning first generation students has also been expanded. This study provided information about first generation students' beliefs and values that was not previously known. It lays the groundwork for future research to learn more about those beliefs and values and how they might affect first generation students' success in higher education.

This study also offered several different constituencies valuable information that they might use to better understand and serve first generation students. From higher education administrators to high school staff to parents and students themselves, the results of this study provide insight regarding the first generation student. This study can also be used as an impetus to promote efforts by various parties to address the needs of first generation students.

Finally, this study should be seen as a stepping stone. It has provided a first step in understanding first generation students, but it is not the final word. As the demographics of college students continue to change, it will be up to those in higher education to continue their efforts to know their students better. Information such as that revealed in this study is necessary

if colleges are going to successfully support first generation students access to higher education and their efforts to achieve the college degree.

In conclusion, it would seem that there are some important differences between first generation and non-first generation college students. These differences need to be addressed in the programs and services provided to first generation students if such schools are to succeed in the higher education arena.

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Appendix A:

Annual Freshman Survey (AFS)

by the Cooperative Institutional Research Program (CIRP)

(This instrument is copyrighted. For more information, contact

the Higher Education Research Institute at

<http://www.gse.ucla.edu/heri/heri.html>.)

Appendix B:

Supplement to the 1998 Student Information Form

(This instrument is copyrighted. For more information, contact the

Virginia Tech Academic Assessment Office at

<http://www.vt.edu:10021/admin/assess/toc.html>.)

Appendix C:

Assignment of Annual Freshman Survey (AFS) Sections

Assignment of AFS Sections

A. Description of Sections Not Used in Study:

Sections	Items
#3 – English native language	1 – yes, no
#9 – Citizenship status	1 – U.S. citizen, permanent resident, neither
#11 – Credits earned prior to this term at this institution	1 – yes, no
#12 – Courses taken prior to this term at other institution	6 – community/junior college, 4-yr. college, other postsecondary school (for credit/not for credit)
#13 – Planned living arrangements	1 – with family, private accommodations, residence hall, Greek housing, other campus student housing, other
#14 – Type of secondary school	1 – public, private (denominational), private (non-religious), other
#15 – College choice	1 – first, second, third, less than third
#17 - Number of additional college acceptances	1 – 0, 1, 2, 3, 4, 5, 6, 7-10, 11 or more
#19 – Parents’ living status	1 – both alive and living together, both alive and living apart, one or both deceased
#22 – Current religious preference – student’s, mother’s, father’s	3 – 17 religions listed (3 people)
#25 – Student adopted	1 – no, yes (at age 0-2, 3-7, 8-12, 13 or older)
#26 – Student ever in foster care	1 – yes, no
#35 – High school require community service	1 – yes, no
#41 – Permission to include ID number	1 – yes, no
#42 – Computer requirement affect choice	1 – not at all, a little bit, somewhat, a lot, did not know about computer requirement
Total: 15 sections	22 items

B. Description of Section Used for Sorting Data

Section	Items
#27 – Parents’ education level	2 – first generation, non-first generation (father, mother)
Total: 1 section	2 items

C. Description of Sections Used to Describe Sample:

Sections	Items
#1 – Gender	1 – male, female
#2 – Age	1 - 18 and younger, 19 and older
#4 – Year of high school graduation	1 – 1998, prior to 1998
#5 – Enrollment status	1 – full-time, part-time
#6 – School’s distance from home	1 – 100 miles or less, 101-500 miles, over 500 miles
#7 – High school GPA	1 – A or A+, A-, B+, B, B-or below
#8 – SAT/ACT scores	3– Math SAT and Verbal SAT (< 500, 500-590, 600-690, > 690), ACT (< 22. 23-30, >30)
#21 – Parents’ total income	1 – less than \$60,000; \$60-99,999; 100-149,999; over \$149,999
#24 – Race	5 – White/Caucasian, African American/Black, Asian American/Asian, Latino, Other
#30(a) – Parents’ occupations (mother, father)	2 (one for each parent) Arts & Humanities, Business, Civil/Military Service, Education, Engineering, Professional, Sciences, Other
#34 - Disability	1 – yes, no
TOTAL: 11 sections	TOTAL: 18 items

D. Description of Sections Used for Demographic Characteristics Research Question:

Sections	Items
#1 – Gender*	1 – male, female
#2 – Age*	1 - 18 and younger, 19 and older
#5 – Enrollment status*	1 – full-time, part-time
#7 – High school GPA*	1 – A or A+, A-, B+, B, B-or below
#8 – SAT/ACT scores*	3– Math SAT and Verbal SAT (< 500, 500-590, 600-690, > 690), ACT (< 22. 23-30, >30)
#20 – Financial support – any; over \$1500	40 (2 for each of 20 items)
#21 – Parents’ total income*	1 – less than \$60.000; \$60-99,999; 100-149,999; over \$149,999
#24 – Race*	5 – White/Caucasian, African American/Black, Asian American/Asian, Latino, Other
#30(a) – Parents’ occupations (mother, father)*	2 (one for each parent) Arts & Humanities, Business, Civil/Military Service, Education, Engineering, Professional, Sciences, Other
#34 – Disability*	1 – yes, no
TOTAL – 10 sections	TOTAL – 56 items

E. Pre-college behaviors

Sections	Items
#10 – High school coursework	8 – met or exceeded recommended #
# 16 - # of college applications	1– 0, 1, 2, 3, 4, more than 4
# 23 – activities/experiences	30 – freq/occas
#32 – time spent on various activities	13 – less than 3, 3-5, 6-10, more than 10
TOTAL – 4 sections	TOTAL – 52 items

F. Beliefs and values

Sections	Items
#18 – Highest academic degree – ever; at this institution	2 (none, vocational certificate, A.A. or equiv), (bachelor’s), (master’s), (Ph.D. or Ed.D.), and (M.D., D.O., D.D.S., D.V.M., LL.B. or J.D., B.D. or M.Div., or other)
#28 – Decision to attend college	12 (very important, somewhat important, not important)
#29 – Personal traits	19 – above average (highest 10%, above average), average, below average (below average, lowest 10%)
#30(b) – Future occupation	1 (Arts & Humanities, Business, Civil/Military Service, Education, Engineering, Professional, Sciences, Other)
#31 – Beliefs	15 – (agrees strongly or somewhat)
#33 – Finance education concerns	1 (none, some, major)
#36 – political view	1
#37 – reasons for selecting school	18 (not important to very important)
#38 – probable field of study	1 (arts & humanities, biol. sciences, business, education, engineering, physical science, professional, social science, technical, other)
#39 – Value of various accomplishments	19 – (somewhat important to essential)
#40 – Likelihood of various experiences	21 – (some chance to very good chance)
#43 – Computer experience	1 (none to novice, familiar, experienced to expert)
#44 – Learn from courses using computers	1 (strongly agree to agree, disagree, don’t know/no opinion)
#45 – Computer classes more challenging	1 (strongly agree to agree, disagree, don’t know/no opinion)
TOTAL – 14 sections	TOTAL: 113 items

Total # of Sections Used in Analysis: 28

Total # of Items: 221**

*Section listed in two tables; used for two purposes.

**Before items and sections were eliminated due to low numbers

Elaine Humphrey

EDUCATION

August 1998 – Present (expected graduation 5/00)
Master's Degree in Higher Education and Student Affairs
Virginia Tech
Blacksburg, Virginia

September 1970 - May 1974
B.A. in Elementary Education
College of William and Mary
Williamsburg, Virginia

WORK EXPERIENCE

Vice Provost for Academic Affairs, January 1999 - Present
Graduate Assistant

- Serve as Coordinator of Student Success Program (review reports, research past projects' effectiveness, facilitate final reports, prepare final report for 1998-1999 programs, support 1999-2000 selection process, maintain website)
- Develop and maintain Undergraduate Research Opportunities website

Student Athlete Office for Academic Enrichment, Virginia Tech August 1998 - May 1999
Graduate Assistant

- Teach "Athletic Transitions"
- Serve on Transitions Committee
- Assist advisors

Career Services, Virginia Tech September to October 1998
Volunteer Mock Interview Program

- Serve as both observer and interviewer
- Provide feedback to student participants

CAEE, Virginia Tech September 1998 - May 1999
Project Success Co-Facilitator

- Work with students needing academic support

CAEE, Virginia Tech May 1997 - August 1998
Office Services Specialist

- Serve as receptionist
- Provide office support to staff of five
- Assist students with tutoring appointments
- Oversee renovations for new office space

PRACTICA

Graduate Student Representative July 1999 – June 2000
to the Board of Visitors, Virginia Tech

Commission on Student Affairs September 1999 – May 2000

Institute for Distance and Distributed Learning January – May 2000

- Research and report on the role of student affairs in distance education

University Task Force on Academic Advising January - August 1999

- Assist internal and external committees
- Organize student focus groups
- Assist with Afternoon Chat series
- Assist Final Report Writing Committee

Institute for African American Student Development January 1999 – January 2000

- Serve on committee to plan and implement program

James Madison University October 7, 1998
Fall Drive In Conference
Co-Presenter - “Transitions: An Enrichment Game Plan for Entering Student Athletes”

Student Athlete Office for Academic Enrichment, Virginia Tech June 1998 - August 1998

- Develop curriculum and syllabus for “Athletic Transitions” course
- Schedule guest speakers and presentations for fall course
- Design supporting documentation for course
- Research benchmark institutions’ programs for freshman student athletes

PROFESSIONAL ORGANIZATIONS

American College Personnel Association September 1998-Present

Association for Student Development September 1998-Present

HONORS

Phi Kappa Phi March 1999

Order of the Gavel October 1999

Who’s Who Among Students in American Universities & Colleges October 1999

Omicron Delta Kappa November 1999