A Quantitative Analysis of The Kenyon Education Enrichment Plan

MASTERS THESIS

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By

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ABSTRACT

Kenyon College is a small, private liberal arts institution that prides itself on the recruitment and retention of diversity students. In order to improve upon recruitment and retention strategies of diversity students, Kenyon designed and implemented a 6-week long, intensive summer bridge program beginning in the summer of 2007. In this study, a quantitative analysis of the program is conducted in order to determine whether students participating in the program are more successful at the College through measures such as first-year grade point average, retention, and persistence. Though each summer cohort is no more than 12 students, which means sample size prevents generalizability, the strength of the internal validity makes this study worthwhile. Due to the small number of participants, however, results of the quantitative study were mostly inconclusive with the exception of students coming from African American descent. African American students who participated in the program had much higher grade point averages than those who did not participate in the program. Additionally, retention rates were higher among program participants than non-participants, but persistence rates were higher among non-participants. Further research is definitely suggested and should include qualitative as well as quantitative measures.
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Finally, I would like to thank my friends and family for putting up with me in this final quarter. It has been a bear and with your love and support, I have made it through to the end.
VITA

May, 2009…………………………………………………………. B.A. Mathematics

Kenyon College

Selected Presentations


Fields of Study

Major Field: Education
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CHAPTER 1: INTRODUCTION

The Oxford English Dictionary defines diversity as: the condition or quality of being diverse, different, or varied; difference, unlikeness (Diversity, a.). Diversity is a loaded topic in education. Since the Civil Rights Movement of the 1960s and rulings regarding affirmative action, an increasing interest in ensuring that persons of diverse backgrounds are able to gain access to educational opportunities has ensued. As more populations gain access to the primary and secondary education system, access to higher education becomes more prevalent. Resultantly, disparities between affluent neighborhood school systems and impoverished neighborhood school systems are noticed as students seek opportunities for higher education. These differences in education gave rise to the notion of the Achievement Gap, which refers to the differences in educational achievement along racial and socio--economical lines. Consequently, programs designed to aid in the preparation of historically underrepresented students begin to develop across the nation.

These programs range from early intervention programs for primary school aged children in inner-cities to literacy programs for adults looking to make changes in their lives with more education and everything in between. Despite their tumultuous history, affirmative action rulings allowed for wider access to education, so these programs developed in order to address the need for more support of diversity students as they navigate the complexities of the educational system in the United States. The system
may be simple enough for someone with any familiarity with it, but to those students who
are the first in their families to attend college or to finish high school, for that matter, the
system is daunting. Imagine being an illiterate parent trying to help a child fill out an
application to a new charter schools network or to an after school enrichment programs.

The problem is certainly not black and white though. Fry (2005) studied Latinos
in education and found that Latinos are more likely to go to primary and secondary
schools with the fewest resources and serve the most students. Though the population of
Hispanics is at least twice the size it was in the 1980s, the percentage of the Hispanic
college-bound population has only grown by 5 percent (Munez 2006). If affirmative
action is in place at institutions, then what is keeping these people from getting to
college? In a report prepared by Tia Gordon with the Institute for Higher Education
Policy (2010), barriers to higher education for Native Americans related to financial,
historical, and cultural issues were identified. These barriers are not different from
barriers to education than barriers other minority cultures in the United States experience.
As President Lyndon Johnson said in his commencement address at Howard University
(1965):

"You do not wipe away the scars of centuries by saying: 'now, you
are free to go where you want, do as you desire, and choose the
leaders you please.' You do not take a man who for years has been
hobbled by chains, liberate him, bring him to the starting line of a
race, saying, 'you are free to compete with all the others,' and still
justly believe you have been completely fair . . . This is the next
and more profound stage of the battle for civil rights. We seek not
just freedom but opportunity—not just legal equity but human
ability—not just equality as a right and a theory, but equality as
a fact and as a result."

Based on President Johnson’s call for a more profound battle for civil rights,
summer enrichment programs are developing across the country. The purpose of this
study, conducted at Kenyon College, was to examine the relationship between student participation in a summer bridge program designed and implemented at Kenyon College and college grade point averages, retention rates, and persistence rates.

History of Affirmative Action

The following table is a brief timeline of Affirmative Action legislation as it relates to education in the United States.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2, 1964</td>
<td>President Lyndon Johnson signs the Civil Rights Act</td>
</tr>
<tr>
<td>June 28, 1978</td>
<td>University of California v. Bakke</td>
</tr>
<tr>
<td>May 19, 1986</td>
<td>Wygant v. Jackson Board of Education</td>
</tr>
<tr>
<td>March 19, 1996</td>
<td>Hopwood v. University of Texas Law School</td>
</tr>
<tr>
<td>November 3, 1997</td>
<td>Proposition 209 - California</td>
</tr>
<tr>
<td>December 3, 1998</td>
<td>Initiative 200 – Washington</td>
</tr>
<tr>
<td>February 22, 2000</td>
<td>One Florida Initiative - Florida</td>
</tr>
<tr>
<td>December 13, 2000</td>
<td>Gratz v. Bollinger</td>
</tr>
<tr>
<td>March 27, 2001</td>
<td>Grutter v. Bollinger</td>
</tr>
<tr>
<td>June 28, 2006</td>
<td>Parents v. Seattle</td>
</tr>
</tbody>
</table>

As evidenced by the timeline, affirmative action rulings have been controversial since their inception. Though not present on the timeline, President Kennedy’s Executive Order in 1961 set the stage for equal opportunities in education by inciting the formation of the Committee on Equal Employment Opportunity. This committee was created to ensure that hiring decisions funded by the federal government were made with no racial bias. In order to make job applicants more competitive, it only seems natural that similar practices would be invoked in educational settings. These rulings stem from decisions made by the Warren Court and the Burger Court in the 1960s (Dale 2005) that called for a “affirmative duty” of the local school boards to desegregate their school systems. Resultantly, a multiple decade process of desegregation ensued. Further rulings on
affirmative action provided legal justification for using race as an admissions criteria as long as it was “narrowly focused” and had “limited extent” (Dale 2005).

In the first case of reverse affirmative action in 1978, *Regents of the University of California v. Bakke*, the Supreme Court ruled that race was a valid factor used in admissions criteria; however, it could not be used in an inflexible fashion as it was used by the University of California Medical School. Other rulings over the next several years took place to remove consideration of race in admissions decisions such as Proposition 209, Initiative 200, and One Florida Initiative, until the 2001 *Gratz v. Bollinger* ruling that established using race as a factor in admissions decisions was constitutional as using race as a factor is not unlike giving preferential treatment to other students whose present may benefit the university. Two years later, however, in *Grutter v. Bollinger*, the decision was overruled on the grounds that “intellectual diversity bears no obvious or necessary relationships to racial diversity” (Dale 2005). The law school ruling was able to stand as it was based upon a holistic review of each applicant whereas simply providing a blanket number of points to every historically underrepresented student, without consideration of specific background and experiences, in the undergraduate admissions process was not meaningful.

Clearly, the question of where advantage is being awarded is at stake. The complexity of the issue deals with the balancing of academic ability with diversity of background and experience. As shown earlier, students from historically underrepresented backgrounds tend to have more barriers to educational attainment, but what is that difference and how should it be used by university admissions committees in
order to optimize the academic quality of their students as well as the diversity of perspective.

Admissions Statistics for Diversity Students

Regardless of the controversial nature surrounding affirmative action legislation, many of the nation’s elite college and universities are increasing efforts to recruit and enroll students from historically underrepresented backgrounds. In order to increase enrollment levels of diversity students, admissions rates for underrepresented students are often higher than average admissions rates (Marble 2008). For example, the average acceptance rate for African-American applicants in to Williams College from 1998-2007 was 55.1 percent whereas the admissions rate for the overall applicant pool at Williams College was 21.1 percent. Similarly, Bowdoin College admitted African-American applicants at a rate that was 23.5 percent higher than its overall admissions rate. Kenyon College, however admitted African-American applicants at an average rate of 34.7% compared to an average admission rate of Caucasian students at 32.8%. Though this difference is not quite as stark as other institutions, Kenyon College is limited by financial constraints, which decreases the institution’s ability to fund larger numbers of African-Americans.

These acceptance differences are not only prevalent among African-Americans’ admissions decisions. Students from all historically underrepresented backgrounds tend to elicit higher acceptance rates than majority culture students at these institutions. The following graph represents the average acceptance rates at Kenyon College for majority culture and minority culture over the last 7 years.
As evidenced by the admissions data, certain ethnicities receive much kinder acceptance rates than the overall acceptance rates. It appears that Asian Americans and Latinos enjoy higher acceptance rates than Kenyon’s average. Because these subgroups generate larger proportions of the overall diversity pool, the overall diversity acceptance rate tends to be a bit higher than the average acceptance rate, but this difference is not exorbitant. Because Kenyon cannot attain more diversity students simply by admitting higher percentages of these students, it must attract them in other avenues. One of the mechanisms used to attract more diversity students is the development of the Kenyon Educational Enrichment Plan. This program is used not only to encourage students of diverse backgrounds to apply to Kenyon but also to aid in their success as Kenyon College students.

Academic Success and Performance in College

Success in college is often defined by grade point average (GPA), retention, persistence, and graduation rates. These indicators of success are often predicted by high school performance, test scores, and demographical data such as gender and
socioeconomic status (SES). It seems that nearly every aspect of a student’s life can influence college success, though cognitive variables are the most widely used and widely studied. Cornwell, Mustard, and Van Parys (2008) suggest that the new SAT Writing section score is among the best predictors of first year grade point averages. Sackett et al (2009) show that SES was related to admissions scores ($r=.42$ among the population of SAT takers) and also that scores on standardized admissions tests were predictive of college grade point averages. When controlling for SES, there were Sackett et al (2009) found only very small reductions in correlations between admissions tests and grade point averages.

Rothstein (2005), however, found that information on the characteristics of high school attended by an applicant is also helpful in explaining college academic performance. Particularly, variables such as the average SAT score for a given high school, or variables that measure the racial/ethnic composition of the high school are significant in explaining college performance measured by grade point average. Based on his findings, on affirmative action legislation and on the breakdown of demographical data, historically underrepresented students are more likely to come from disadvantaged backgrounds and therefore are less likely to succeed in college as a result of low academic preparedness, lack of college knowledge, and the financial burden incurred to achieve a college degree.

As stated previously, students from diverse backgrounds are more likely to be less prepared academically for college. In a recent study conducted by Rootcause (2010) on the status of college access and success, it was reported that more than half of students who graduate from high school cannot satisfy the minimum requirements of four year
degree programs. This information was not divided along racial or cultural lines. It simply conveys the tragic state in which many of our schools reside. In the same study, it was found that in the year 2007, 76 percent of students from high-income families obtained a bachelor’s degree by the age of 24. In contrast, only 10 percent of students from low-income families received a bachelor’s degree by the age of 24. Additionally, the average annual earnings for those holding a bachelor’s degree were $27,400 higher than those with a high school diploma. Evidently, status breeds success which breeds status which breeds further success. In order to return to the meritocratic foundation of this country, many organizations have designed variety of educational enrichment programs that primarily serve students from diverse backgrounds.

A Brief History of Kenyon College and the Kenyon Educational Enrichment Plan

To provide a bit of context, Kenyon College was founded as an all-male Episcopal Seminary in 1824. It is the oldest private college in the state of Ohio. Ties to the Episcopal church have since been severed and women arrived on campus through the Coordinate College of Women beginning in September of 1969. The Coordinate College became fully integrated into Kenyon College in 1972. Beyond the discrimination of women, from P.F. Kluge’s *Alma Mater* (1993), it is clear that cultural diversity is scarce on campus until recent years as well. Suffice it to say that Kenyon’s relationship with underrepresented populations is fairly young, though it does not remove the emphasis the College places on the importance of cultural and intellectual diversity. Today, Kenyon is among the nation’s top liberal arts colleges and boasts an enrollment of approximately 1700 students, 17 percent of which come from historically underrepresented
backgrounds. Though the numbers are small, they mark progress. It is clear that the
development of the KEEP program was years in the making.

In 1998, Kenyon received a generous grant from an alumna, Nina Freedman who
operates The Silverweed Foundation, a non-profit activist organization. This grant was
designed to support students who were previous participants in Kenyon’s School-College
Articulation Program (SCAP) and were preparing for their first year at Kenyon.¹ As an
extension of SCAP, this program, affectionately dubbed “Silverweeds” for its
benefactor’s foundation, used the grant money to bring five SCAP alumni to campus in
the summer prior to their first year in the College to provide them with an intense
internship experience in addition to exposure to the academic rigors of the institution.

The initial program was a 2-week experience in which students spent much of
their days working on close-reading and analytical writing skills and then the remainder
of their days working closely with faculty on their internships. These students received
stipends to compensate for time lost at a job and their internships were designed to
enhance their academic preparation in a study area of interest to them. The goal of the
program was not only to aid in the transition from high school in the inner city to college
in a rural setting but also to instill self-confidence within these students to succeed in the
rigorous educational environment of Kenyon.

When the three-year grant period ended, the College allocated funding for similar
types of students to spend a few weeks on campus taking an expository writing course.

¹ SCAP is a year-long program in which participants take college-level courses at their
home institutions taught by their home teachers with Kenyon faculty assistance. By the
time they are rising juniors and seniors in high school, these students are invited to the
campus of Kenyon College for an intensive, hands-on experience designed to prepare
them for college.
This second iteration of Silverweeds invited more students to campus and involved more faculty in the curriculum development. By 2005, improvements in the confidence level of students participating in the program as well as their writing skills inspired the development of an additional course in data analysis. In the year 2007, this data analysis course made its debut in the first year of what is now known as the Kenyon Educational Enrichment Plan (KEEP).

The KEEP program in its current form serves twelve students (known as KEEPers) from historically underrepresented backgrounds (students from underrepresented backgrounds will be denoted by SOC). These students are hand-selected by members of the Office of Admissions, the Office of Multicultural Affairs, and the Faculty. The selection is not random, but rather intentional. An attempt to balance for gender, academic interest, and ethnicity is made, though limitations are recognized due to the small size of the cohort. Since its inception, no quantitative analysis has been conducted to determine whether the KEEP program is successful in retaining SOCs and supporting them as they persist through Kenyon College.

Retention is one of the main aims of the KEEP Program. According to Tinto’s Student Integration model, many factors contribute to college success where the desired outcome is a college diploma, among them, retention. In order for retention rates to improve, Tinto (1975) highlights the importance of a student’s engagement with the institution. Figure 3 illustrates the relationship between student background with student engagement.
It is clear that many factors contribute to student outcomes in college. Murphy, Gaughan, and Hume (2010) identified demographic characteristics as influential individual factors that affect student graduation rates. Race, gender, and socioeconomic status matter, and unfortunately, these characteristics are beyond a student’s control. Additionally, though, many studies have shown that high school grade point averages are strong predictors of first-year grade point averages, and high school grade point averages is something to which students have some level of control. Despite control over grade point averages, there are differences in graduation rates along racial lines, with the most egregious graduation rates coming from African Americans, particularly men. In order to support SOCs (or anyone for that matter) and to encourage success, institutions of higher
education must commit to genuine support programs and services that last the entire length of time a student is enrolled in college.

Kenyon College is certainly not the only school that has implemented an enrichment program for SOCs. In order to “level the playing field” and to help better serve these students, many colleges and organizations have developed similar programs to give these students a jump start to college. Like the KEEP program, these programs are designed to focus on academic skills and self-reliance skills. Many of the programs have components related to time management, study skills, financial planning, and social mapping so that the program participants feel more prepared for the classroom and for life on campus.

Though Kenyon College has conducted internal, qualitative reviews for the KEEP program, no quantitative analysis of the program has been conducted. The rationale of this study is to provide more information to the College, its Board of Trustees, and program facilitators of the effectiveness of the KEEP program. The following study strives to determine whether the KEEP program is successful at combating drop-out rates for SOCs and whether or not the courses within the program help teach the necessary skills for students to be successful in the classroom. Does participation in the KEEP program lead to higher retention rates? Do KEEPers have higher college grade point averages than non-participants of the program? Are persistence rates higher among KEEPers than non-KEEPers?
CHAPTER 2: A REVIEW OF THE LITERATURE

The purpose of this study is to determine whether participation in the Kenyon Educational Enrichment Plan influences student achievement at Kenyon where student achievement is measured by persistence, retention, and grade point average. Due to the extensive research on predictors of student achievement in college, it is beyond the capacity of this author to perform an exhaustive review of the literature. Therefore, the literature in this section is focused on research on cognitive predictors of academic success, research on pre-college programs that serve a wide audience, and then institution specific pre-college programs.

Research on Academic Predictors

Increasing amounts of research have been conducted on academic predictors of success in college. Much of this research focuses on cognitive predictors of success while only recent studies have included non-cognitive predictors of success. The nature of this study focuses on cognitive predictors of success though future research advocates for more work in the non-cognitive arena.

Geiser and Santelices (2007) conducted a study of nearly 80,000 freshmen who entered the University of California system between 1996 and 1999. They employed regression analysis to determine what influence high school grades and test scores have on four-year graduation rate from college and cumulative grade point averages in college. Results show that high school grade point average and SAT Writing score have the highest predictive weight for four-year graduation rate from college and cumulative
college grade point average ($\beta_{HSGPA} = .34, \beta_{SATW} = .19$). Though Geiser and Santelices (2007) show promising results, they caution readers from placing too much confidence in these findings as the explained variance of high school grade point average and standardized test scores is only 27 percent. This number is certainly an acceptable number in the research world, but it also shows that much of the variance in college grade point averages is unexplained. The absence of explanation is likely due to the many factors that influence the undergraduate experience across the board.

In a study conducted by Hoffman and Lowitzki (2005), a path analysis model was employed to gain a more nuanced understanding of individual predictors such as high school grade point average, standardized test scores, and racial identification on college success. In this study, it was found that when comparing the entire sample, high school grade point averages were a stronger predictor of college academic achievement for students of color (.33) as well as white students (.34). From this study also, it is clear that high school grade point average is a better predictor of college grade point average than standardized test scores. It is posited that prior achievement in high school led to validating experiences which empowered students of color to embrace their innate abilities and pursue them in college more so than a standardized test score. Finally, an interesting finding of this study is that standardized test scores are stronger predictors of success for minority students when they attend institutions of higher education in which they are no longer the minority such as historically black colleges and universities. Perhaps, the culture shock of being on a predominantly majority campus contributes to performance of minority students. These findings are particularly important to the study at Kenyon as it is a predominantly white, affluent institution.
Research on General Pre-College Programs for Underrepresented Students

In a study conducted by Hurtado, S., Carter, D.F., and Spuler, A (1996), Latino students were monitored as they transitioned into college and then again in their second years. Data from a national longitudinal study was used to understand the experiences these students had during their first and second years of college. Hurtado et al (1996) used blocked hierarchical regression to examine which student behaviors such as ease in getting to know campus, managing resources, family relationships and support, etc., contributed the most to overall adjustment in school.

Additionally, Hurtado et al (1996) examined how different pre-college factors such as high school grade point averages and standardized test scores influenced adjustment. The results of this study suggest that many of the pre-college indicators do not influence adjustment to college. The largest contributors to adjustment are college experiences which can be created by summer bridge programs such as the KEEP Program.

In another study conducted by the Boston Higher Education Partnership (2007), students from the Boston Public School system were studied as they transitioned into college. This study pulls data from surveys and focus groups of forty-nine students who had already made it through their first year of college, focus groups of seven guidance counselors who were able to discuss pre-college experiences of these students, and college transcripts of 465 Boston Public School graduates at 11 different institutions of higher education. The results of the study show that participation in Ackany pre-college program regardless of depth and duration was beneficial to students. The results also show that student perception of success is indicative of actual performance, though actual
high school preparation was the most predictive of success in college. The emphasis on a 
college-going culture and on learning study skills and time management techniques 
suggest that secondary school systems and institutions of higher education should spend 
more time on these strategies for success so that students are more likely to perform 
better in a college setting.

A third study by Dave Pavelchek and Kirby Pitman (2008) analyzes GEAR UP 
(Gaining Early Awareness and Readiness for Undergraduate Programs) at Washington 
State University. GEAR UP is a federally funded program that provides matching grants 
to education partnerships and states in hopes of increasing the enrollment of low-income 
students. The study analyzed three cohorts of students who earned GEAR UP 
scholarship money. The totally sample size was 348 students who actively participated in 
the GEAR UP program and an outcomes comparison was conducted on measures such as 
enrollment and persistence. The results from Pavelchek and Pitman’s study show that 
GEAR UP students have more positive outcomes on basically all measures of enrollment 
and persistence. GEAR UP students enrolled in two-year colleges at a 50% higher rate 
than the comparison group (students on free or reduced lunch). GEAR UP students also 
had a higher retention rate by 4% from freshmen year to sophomore year. Additionally, a 
proportion of about 65% more of the GEAR UP students attained a degree within five 
years over the comparison group. These positive results indicate that pre-college 
workshops and preparation does play a role in success in college.

Research On Institution Specific Programs

In another study conducted at Lafayette College by Sharon Jones and Martha 
Were (2008), students involved in the POSSE Program were studied in order to ascertain
if membership in the POSSE influenced retention within engineering. The POSSE Program is a national program that partners with institutions and helps them recruit a cohort of ten students (a posse) from the same city to attend that institution. Some institutions who partner with the POSSE Program have multiple partnerships and will receive a couple of different cohorts of students from different cities. Though Kenyon College does not participate in the POSSE Program, the cohort mentality championed by POSSE is very similar to the cohort mentality the KEEP Program creates. Essentially, KEEP is Kenyon College’s internal POSSE program. Hence, this study is of particular interest to the KEEP study as Lafayette College is similar in size and offerings to Kenyon College. The difference, however, is that the Lafayette study focuses on retention of SOCs in engineering. Kenyon does not have an engineering program, so some differences can be expected.

Lafayette identified 33 SOCs in the graduating class of 2010 and used the Lafayette admissions rating, high school GPA, SAT verbal and math scores as their academic measures. They then administered a survey measuring academic and social integration of these students. Among the 33 students, 25 total responded to the survey and became a part of the study group. This group was broken into three additional groups: POSSE students, Non-POSSE students (SOCs), and Non-POSSE majority students. Though the study is certainly very small in scope, the amount of background information known about the students, including prior measures of academic success, give the study stronger internal validity. Results show that POSSE students are more committed to engineering and are better at integrating into the academic community at Lafayette than their non-POSSE comparison group (non-POSSE minority students). This
difference could be attributed to differences between POSSE students and non-POSSE students in terms of recruitment strategy, or it could be due to the increased programming and leadership training available to students in the POSSE cohort.

Because the Lafayette study was so small, another study conducted by Terrence Murphy, Monica Gaughan, and Robert Hume (2010) at the Georgia Institute of Technology (Georgia Tech) sheds further light on the retention of minority students. In this study, the Challenge Program at Georgia Tech was analyzed using discriminant analysis. Data collected from participants and non-participants (N=2222) between 1990 and 2000 was used. The Challenge Program at Georgia Tech is very similar to the KEEP Program. Founded in 1981, the Challenge Program had roots in remediation. Since then, the program evolved to embody a mission of support and integration for SOCs. Today, the Challenge Program is a 5-week academically intensive program designed to enrich the academic preparation of students selected to participate while also teaching time management skills.

Results of this study show that after controlling for academic characteristics and demographics, participants of the Challenge Program were more likely to graduate than non-participants. Another interesting result from the study was that higher high school grade point averages as well as the amount of Advanced Placement (AP) credit a student received were associated with the likelihood of graduation. These results suggest that the Challenge Program may help SOCs successful integrate into the Georgia Tech community and persist through graduation.

Similarly, Susan Ackermann (1991) conducted a study on the benefits of the University of California-Los Angeles’ summer bridge program for their incoming
transfer cohort. The Transfer Summer Program (TSP) is a 6 week, academically intensive summer program in which students took classes in Mathematics and English. This program is similar to the KEEP Program in terms of time on campus and the academic emphasis, which is why the results are important to the KEEP study.

Data from 265 students was collected and followed those who entered in the fall of 1988 through two quarters at UCLA. Results of this study show that the summer bridge program for underrepresented and low-income students aided in their transition to UCLA and improved their grade point averages as well as their persistence rates. Beyond numeric results, it was suggested that the program helped SOCs better adjust to university life and integrate within the campus community.

Much of the research in this area is conducted pertaining to retention of minority students in the sciences as well as the persistence and integration of transfer students. These environments are not exactly the same as the Kenyon environment, nor are they related to one another, but results are similar in these studies. It appears that summer programs are an effective tool in aiding student enrollment at these institutions. Even though Kenyon College is a different type of institution, for many of the same reasons, it is believed that the KEEP Program is influential to student success.
CHAPTER 3: METHOD

Participants

The KEEP Program has been in operation since the summer of 2007. Since then, 5 cohorts of students have been selected carefully by a committee comprised of the Director of Multicultural Admissions, the liaison to the Natural Science division, two natural science faculty members, and the Assistant Director of Multicultural Affairs. These cohorts are non-random and are chosen carefully to create a balance among gender, ethnicity, academic interest and ability, and geography. In order to ensure that the program is not seen as a remedial program, previously established cognitive predictors of academic success are used in ensuring that students chosen represent a variety of ability levels.

In this study, 114 students belonging in the Kenyon classes of 2011-2015 were used. 57 of these students participated in the KEEP program while 57 students did not participate in the program. Data on pre-college indicators of success and demographic data was collected from the Office of Admissions database. College transcripts that show grade point averages as well as the percentage of credits completed by individual students will be obtained from the Office of the Registrar for these students in the study.

The average high school grade point average (HSGPA) for students participating in the KEEP program is slightly lower than students who are non-participants (3.28 vs 3.30). A test of the means shows that this difference is not significant. Additionally, students in the KEEP Program have slightly lower SAT Math (SATM) and SAT Writing
(SATW) scores on average (598.60 vs 616.68 and 594.21 vs 620.56 respectively) than non-KEEPers, but again these differences are not significant at the .05-level. Finally, KEEP students have higher SAT Verbal (SATV) scores than the non-participants, but this difference again is not significant. The figure below summarizes these results.

**Figure 4: Cognitive Predictors of Success by KEEP Affiliation**

<table>
<thead>
<tr>
<th>KEEP</th>
<th>HSGPA</th>
<th>SATM</th>
<th>SATV</th>
<th>SATW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Participant</td>
<td>Mean</td>
<td>3.2975</td>
<td>616.6842</td>
<td>601.0526</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>57</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.41373</td>
<td>73.86696</td>
<td>70.11939</td>
</tr>
<tr>
<td>Participant</td>
<td>Mean</td>
<td>3.2751</td>
<td>598.5965</td>
<td>615.0877</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>57</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.47017</td>
<td>80.14359</td>
<td>86.08805</td>
</tr>
</tbody>
</table>

T-values:
- HSGPA: t=2.71, p=.787
- SATM: t=1.253, p=.342
- SATV: t=-.954, p=.342
- SATW: t=1.81, p<.072

Additionally, there are 56 Men and 58 Women in this sample. 16 students are Caucasian (8 men, 8 women), 20 are Asian (6 men, 14 women), 36 are Latino (22 men, 14 women), 36 are African American (18 men, 18 women), 2 are Multi (both men), and 4 are Native American (all women). For a better idea, please see Figure 5 below.

**Figure 5: Ethnic Breakdown by Gender**

<table>
<thead>
<tr>
<th>Ethnic</th>
<th>Caucasian</th>
<th>Asian</th>
<th>Latino</th>
<th>AfriAm</th>
<th>Multi</th>
<th>Native</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>8</td>
<td>6</td>
<td>22</td>
<td>18</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>14</td>
<td>22</td>
<td>18</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>20</td>
<td>36</td>
<td>36</td>
<td>2</td>
<td>4</td>
<td>114</td>
</tr>
</tbody>
</table>

Finally, due to the differences in college experience by ethnicity, it is also important to notice the difference in mean HSGPA for participants of each ethnicity. Figure 6 below is a table of mean HSGPA by ethnicity. From the table above, it can be seen that Asians enter with the highest HSGPA, Caucasians with the second highest HSGPA, Natives with the third highest HSGPA, Latinos with the fourth best HSGPA,
African Americans with nearly the worst HSGPA and Multi racial students with the lowest HSGPA (though this only involves two students).

<table>
<thead>
<tr>
<th>Ethnic</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>3.4694</td>
<td>16</td>
<td>.39041</td>
</tr>
<tr>
<td>Asian</td>
<td>3.5335</td>
<td>20</td>
<td>.34667</td>
</tr>
<tr>
<td>Latino</td>
<td>3.2750</td>
<td>36</td>
<td>.34708</td>
</tr>
<tr>
<td>AfriAm</td>
<td>3.0889</td>
<td>36</td>
<td>.51823</td>
</tr>
<tr>
<td>Multi</td>
<td>2.8900</td>
<td>2</td>
<td>.09899</td>
</tr>
<tr>
<td>Native</td>
<td>3.3950</td>
<td>4</td>
<td>.29240</td>
</tr>
<tr>
<td>Total</td>
<td>3.2863</td>
<td>114</td>
<td>.44103</td>
</tr>
</tbody>
</table>

Treatment

The KEEP Program was designed by a team of faculty and administrators at Kenyon College in order to increase the performance, retention, and persistence of SOCs on campus. In this program, students spend six weeks on the campus of Kenyon College during the summer prior to their freshmen years. During the six-week program, students take two, credit-bearing courses earning the equivalent of 1 college course. The first course is a course in expository writing and focuses on the book Beloved by Toni Morrison. Morning sessions of the course are conducted in a similar fashion to introductory English seminars and challenge students to think deeply about the readings. In the afternoon, the activity varies. Some afternoons, workshops in essay writing occur. Other afternoons involve meetings with Academic Advising, Housing and Residential Life, Tutoring and Support Services, the Math and Science Skills Center, Health and Counseling, Library and Information services, and the Office of Pre-professional studies. Through these meetings, students gain more exposure to campus resources and campus programming in hopes of facilitating greater integration into the college community.
During the 3-week data analysis course, students spend their mornings in a lecture format similar to many introductory level science courses. This course focuses on data analysis techniques that will help students be better prepared to take any of the quantitatively driven courses at Kenyon. This course is not a content driven course but one about skill building in order to empower students to be able to take a data set and conduct an analysis upon it. Afternoon sessions are spent doing lab work, gaining further exposure to campus offices, and participating in research internships with a member of the natural science faculty.

In addition to the academic component of the program, social activities are planned to facility community building among these students. Studies have shown that learning communities aid in the development and performance of students at the collegiate level (Murrell 2002), so this social component should not be overlooked. Giving these students a community provides them with a support system and an initial, social network to jump start their college careers. These outings are also additional opportunities for students to get to know faculty to develop non-academic relationships with them. It is believed that these relationships are the hallmark of the institution and foster the collaborative and cooperative learning environment.

Assessment

This analysis was performed as a comparison of the performance of KEEP students to KEEP-eligible students in the Classes of 2011-2015. The analysis focuses mainly on the cumulative grade point average of each student as the variable of interest but also examines retention rates and persistence rates between the two groups. Though prior studies conducted used Structural Equation Modeling, the sample size of this study
limits at 114 participants barely meets the minimum criteria for a satisfactory sample size according to research done by Schumacker and Lomax (2010). A multiple regression is conducted using the following variables.

**Table 7: Model 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted HS GPA</td>
<td>HSGPA</td>
<td>As provided by Admissions. This GPA is the recalculated high school grade point average for each student including only core classes: Math, Science, Social Studies, Foreign Language, and English</td>
</tr>
<tr>
<td>SAT Math Score</td>
<td>SATM</td>
<td>Actual SAT Math component score; if no SAT is provided, this is concordance SAT score for the reported ACT according to collegeboard.org</td>
</tr>
<tr>
<td>SAT Verbal Score</td>
<td>SATV</td>
<td>Actual SAT Verbal component score; if no SAT is provided, this is concordance SAT score for the reported ACT according to collegeboard.org</td>
</tr>
<tr>
<td>SAT Writing Score</td>
<td>SAT W</td>
<td>Actual SAT Writing component score; if no SAT is provided, this is concordance SAT score for the reported ACT according to collegeboard.org</td>
</tr>
</tbody>
</table>
| Highest Math Course   | MathLevel| 1 = Algebra 2  
2 = Trig/Stats  
3 = PreCalc  
4 = Calc/APStatistics  
5 = APCalculus                                           |
| Race/Ethnicity        | Ethnic   | Caucasian = 1  
Asian American = 2  
Latino = 3  
African American = 4  
Multi Racial = 5  
Native = 6                                                            |
| Sex                   | Gender   | M = 1  
Female = 2                                                                                                             |
| KEEP Participation    | KEEP     | KEEP = 1 means student is in the program  
KEEP = 0 means student is eligible but not a program participant                                                           |
Results

The regression results are presented in the following table.

**Figure 8: Model 1 Results, CGPA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.313</td>
<td>.636</td>
<td>.493</td>
</tr>
<tr>
<td></td>
<td>KEEP</td>
<td>.095</td>
<td>.087</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>.258</td>
<td>.086</td>
<td>.258</td>
</tr>
<tr>
<td></td>
<td>Ethnic</td>
<td>-.033</td>
<td>.041</td>
<td>-.079</td>
</tr>
<tr>
<td></td>
<td>MathLeve</td>
<td>.022</td>
<td>.052</td>
<td>.039</td>
</tr>
<tr>
<td></td>
<td>HSGPA</td>
<td>.204</td>
<td>.105</td>
<td>.178</td>
</tr>
<tr>
<td></td>
<td>SATM</td>
<td>.001</td>
<td>.001</td>
<td>.223</td>
</tr>
<tr>
<td></td>
<td>SATV</td>
<td>.001</td>
<td>.001</td>
<td>.218</td>
</tr>
<tr>
<td></td>
<td>SATW</td>
<td>.000</td>
<td>.001</td>
<td>-.040</td>
</tr>
</tbody>
</table>

a. Dependent Variable: CumGPA, $R^2 = .288$

As demonstrated by Model 1, Gender ($t=3.004, p=.003$), and SATV ($t=2.082, p=.040$) are the only variables significant at the .05-level. Obtaining significant values for SATV is consistent with the literature. HSGPA ($t=1.945, p=.055$) and SATM ($t=1.877, p=.063$) are nearly significant, but not at the more stringent level of .05. From the table above, we develop the regression equation of

$$\text{CumGPA} = .313 + .095\text{KEEP} + .258\text{Gender} - .033\text{Ethnic} + .022\text{MathLevel} + .204\text{HSGPA} + .001\text{SATM} + .001\text{SATV} + 0\text{SATW}$$

This equation (or the B-weights in the table) shows that participation in the KEEP program leads to a .095 increase in cumulative GPA, however, this is nonsignificant. Being female though does mean an increase in CumGPA by .258 points. Similarly for every one point increase in HSGPA, CumGPA increases by .204.

Clearly, Model 1 does not show promising results for the KEEP Program. As a result, a modification needed to be made. It seems that the KEEP Program overall may lead to higher CGPA and may lead to better retention rates; however, results are not
statistically significant. Perhaps, better results would ensue if an interaction term was
introduced between KEEP and Ethnicity. This supposition was made by the influence of
Hoffman and Lowitzki’s (2005) work on limitations of test scores and high school
grades in predicting college success for minority students. Results from this paper
suggest that students of different backgrounds are influenced by different factors of their
collegiate experiences. Because of these differences, examining differences with the
KEEP Program and ethnicity makes sense.

The second model tests the interaction between the variables KEEP and African
American. As stated previously, students who participated in KEEP and identify as
African American were given a “1” for the variable KEEPBlk.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>- .879</td>
<td>.705</td>
<td>-1.246</td>
</tr>
<tr>
<td>KEEP</td>
<td></td>
<td>.079</td>
<td>.125</td>
<td>.073</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>.281</td>
<td>.098</td>
<td>.257</td>
</tr>
<tr>
<td>Ethnic</td>
<td></td>
<td>-.064</td>
<td>.159</td>
<td>-.057</td>
</tr>
<tr>
<td>KEEPBlk</td>
<td></td>
<td>.391</td>
<td>.204</td>
<td>.277</td>
</tr>
<tr>
<td>MathLevel</td>
<td></td>
<td>.039</td>
<td>.058</td>
<td>.066</td>
</tr>
<tr>
<td>HSGPA</td>
<td></td>
<td>.327</td>
<td>.117</td>
<td>.273</td>
</tr>
<tr>
<td>SATM</td>
<td></td>
<td>.002</td>
<td>.001</td>
<td>.242</td>
</tr>
<tr>
<td>SATV</td>
<td></td>
<td>.002</td>
<td>.001</td>
<td>.229</td>
</tr>
<tr>
<td>SATW</td>
<td></td>
<td>.000</td>
<td>.001</td>
<td>.052</td>
</tr>
</tbody>
</table>

Figure 10. This is a model of the interaction between participation in the KEEP Program
and being African-American. In this model the dependent variable is Yr1GPA, $R^2 = .441$.

In this model, KEEPBlk is significant if we increase alpha to the .1 level ($t = 1.918,$
$p = .059$). Given the smaller sample size, increasing alpha would be acceptable as it would
increase power. Power would increase in this instance because a higher level of alpha
leads to a higher likelihood of rejecting the null. Thus KEEPBlk is significant ($t=1.918$)
and shows that African American KEEP participants tend to have a first year GPA that is
.391 points higher than non African-American KEEP participants and non-participants. 

\( R^2 = .441 \) tells us that approximately 44 percent of the variance in Yr1GPA is explained by the equation.

Additionally, in this model, participation in the KEEP Program is not as significant, nor does it produce as large of a change. Gender does play a larger role as females in this model earn Yr1GPAs that are .281 points higher than males. It is also demonstrated that HSGPA, SATM, and SATV are also significant, which can be expected given previous research; however, SATW is not significant. The absence of significance may be due to the fact that SATV captures much of the same abilities as SATW.

In a third model, the interaction between Latino and KEEP was measured using the variable KEEPLat. KEEPLat=1 if a student is a KEEP participant and identifies as Latino. The results from this model are curious and are illustrated by the figure below. In this particular model, it appears that those who participate in the KEEP program and identify as Latino have a first year grade point average that is .470 points lower than all other groups in the sample, and this result is significant (\( t=-2.076, p=.041 \)).

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-.497</td>
<td>-.920</td>
<td>.361</td>
</tr>
<tr>
<td></td>
<td>KEEP</td>
<td>.340</td>
<td>.311</td>
<td>2.921</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>.282</td>
<td>.258</td>
<td>2.888</td>
</tr>
<tr>
<td></td>
<td>Ethnic</td>
<td>.118</td>
<td>.094</td>
<td>.732</td>
</tr>
<tr>
<td></td>
<td>KEEPLat</td>
<td>-.470</td>
<td>-.286</td>
<td>-2.076</td>
</tr>
<tr>
<td></td>
<td>MathLevel</td>
<td>.047</td>
<td>.081</td>
<td>.812</td>
</tr>
<tr>
<td></td>
<td>HSGPA</td>
<td>.279</td>
<td>.234</td>
<td>2.576</td>
</tr>
<tr>
<td></td>
<td>SATM</td>
<td>.001</td>
<td>.196</td>
<td>1.471</td>
</tr>
<tr>
<td></td>
<td>SATV</td>
<td>.001</td>
<td>.191</td>
<td>1.682</td>
</tr>
<tr>
<td></td>
<td>SATW</td>
<td>.000</td>
<td>.058</td>
<td>.405</td>
</tr>
</tbody>
</table>

Figure 10. This is a model of the interaction between participation in the KEEP Program and being Latino. In this model the dependent variable is Yr1GPA, \( R^2 = .420 \).
Other interesting results, however, show that now participation in KEEP in general is significant ($t=2.921, p=.005$). Thus, for this model, with fewer ethnicity codings, KEEP students in general earn a first year grade point average that is .340 points higher than non-KEEP students, but Latino students in KEEP, earn grades that are .470 points lower than non-Latino participants in KEEP and non-participants.

In the fourth model conducted on the interaction between KEEP participants and Asian students, very few of the results are of much interest as only two are significant at the .1-level. The two significant variables are Gender and MathLevel. The significance of Gender ($t=2.795, p=.007$) suggests that females have better first year GPAs by .282 points. HSGPA is also significant, as to be expected based on results of the previous models. The purpose of this particular model, though, was to ascertain the significance of the interaction of KEEP and Asian. In this model, there is no significant interaction. Even if there was a significant interaction, the change in GPA for Asian KEEP participants and non-Asians, and non-KEEP participants is minimal at best. A more comprehensive view of model results can be seen below in Figure 12.

---

### Figure 11: Model 4, KEEP-Asian Interaction

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-.231</td>
<td>.588</td>
<td>-.393</td>
<td>.695</td>
</tr>
<tr>
<td>KEEP</td>
<td>.205</td>
<td>.117</td>
<td>.187</td>
<td>1.746</td>
<td>.085</td>
</tr>
<tr>
<td>Gender</td>
<td>.282</td>
<td>.101</td>
<td>.258</td>
<td>2.795</td>
<td>.007</td>
</tr>
<tr>
<td>Ethnic</td>
<td>.104</td>
<td>.181</td>
<td>.077</td>
<td>.575</td>
<td>.567</td>
</tr>
<tr>
<td>KEEPAsn</td>
<td>.060</td>
<td>.246</td>
<td>.033</td>
<td>.243</td>
<td>.808</td>
</tr>
<tr>
<td>MathLevel</td>
<td>.030</td>
<td>.061</td>
<td>.050</td>
<td>.489</td>
<td>.626</td>
</tr>
<tr>
<td>HSGPA</td>
<td>.238</td>
<td>.115</td>
<td>.199</td>
<td>2.071</td>
<td>.042</td>
</tr>
<tr>
<td>SATM</td>
<td>.002</td>
<td>.001</td>
<td>.258</td>
<td>1.945</td>
<td>.055</td>
</tr>
<tr>
<td>SATV</td>
<td>.001</td>
<td>.001</td>
<td>.192</td>
<td>1.657</td>
<td>.102</td>
</tr>
<tr>
<td>SATW</td>
<td>-9.900E-5</td>
<td>.001</td>
<td>-.014</td>
<td>-.098</td>
<td>.922</td>
</tr>
</tbody>
</table>

a. Figure 12. This is a model of the interaction between participation in the KEEP Program and being Asian-American. In this model the dependent variable is Yr1GPA, $R^2 = .388$. 

---

28
In addition to examining the influence of the KEEP Program on college grade point average, retention rates are also considered. Retention is whether or not a student is still attending the college. On the variable “Retention”, subjects received a score of “1” if they are still enrolled in the College or if they graduated from the College. Students received a “0” if they left the college and have not returned. The table below illustrates the retention of the KEEP students and the non-KEEP students.

<table>
<thead>
<tr>
<th>Figure 12: Retention Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention</td>
</tr>
<tr>
<td>Not in school</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>KEEP Non-Participant</td>
</tr>
<tr>
<td>KEEP Participant</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

From the table, we glean that twice as many non-participants left the college than participants resulting in an 82.4 percent retention rate for non-participants and a 91.2 percent retention rate for participants. However, using a simple t-test shows that this difference is not significant ($t=1.385, p=.169$).

Persistence rates are also examined in relation to participation in KEEP. Average persistence rates across KEEP Participants and Non-KEEP Participants were obtained and results are in the following table.

<table>
<thead>
<tr>
<th>Figure 13: Persistence Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEEP</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Non-Participant</td>
</tr>
<tr>
<td>Participant</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Persistence was measured as a proportion and simply took the number of credits students completed divided by the number of credits students should have completed. As shown by the table, non-participants earn on average 95 percent of the credit they are supposed
to earn while participants earn on average 92.8 percent of the credit they are supposed to
earn. Similarly to retention, using a t-test, this difference is also not significant ($t=.655,
p=.514$).

There was one case that was thrown out among the non-participants because the
student left before the end of his first semester. Including this student within the data
would have altered the average persistence rate of non-participants, so this data point was
simply removed.
CHAPTER 4: DISCUSSION

From the first model, it can be determined that holding all other variables constant, being a KEEPer corresponds to a .095 higher CumGPA (not significant). Results also show that being female corresponds to a .258 higher CumGPA. Additionally, higher HSGPA and SAT scores correspond to higher CumGPA as well. The results of this model do not shed much light on the current influence of KEEP on college success in a quantitatively substantive manner. Weak results, however, does not translate into an ineffective program. Due to the enthusiasm of the administration to continue to fund this program and since other similar programs with larger cohorts have exhibited some success, more data should be collected before drawing further conclusions about the overall program.

From the remaining models, it appears that African Americans are benefitting the most from this program. Going from the lowest HSGPA to having a significantly higher Yr1GPA suggests that African Americans made huge strides during the summer program. Questions surrounding this improvement beg for more in depth research to be conducted on the variety of components of the KEEP Program. Were these students more successful in their first semesters due to the academic preparation received? Were they more successful because of the exposure to campus resources and the community? Was their success due to the learning community developed through the cohort? Prior research has shown that African American students do best when learning within a
community (Murrell 2002), so it is not surprising that this group of students would really excel after going through the KEEP Program.

Furthermore, if only one ethnic subgroup could stand to benefit from the program, the African-American group should be the one to attain these benefits. Given the shrinking number of African-Americans in higher education, providing programming to aid in the retention and persistence of these students is essential. Examining admissions rates at Kenyon College in particular, African-Americans are admitted at much lower rates than Asians or Latinos. This lower admission rate could be due to the academic preparation of the students as well as the demonstrated financial need. Because African Americans are among the poorest and least prepared students in the country, it makes sense that their admission rate to a highly-selective institution would be lower. These facts reiterate the need for programming that will support the retention and persistence efforts of African Americans, perhaps even beyond what other students are receiving.

Regarding the retention and persistence rates, both are very high. Even among the non-participants, the average retention rate was 82.4 percent while national averages are much lower. The participant retention rate was approximately 10 percent higher than the non-participant. The difference in retention could be attributed to the KEEP Program, but it could also be due to a number of other factors that influence college experience. A more in-depth study regarding retention rates could shed more light on the situation.

An interesting result dichotomy arises when retention rates are compared with persistence rates. Retention rates for KEEP Participants are higher where persistence rates for the same group of people are lower. This duality suggests that KEEP students are more likely to remain at Kenyon to receive a degree than their non-KEEP
counterparts. However, it may take the KEEP Participants longer to earn a degree than non-KEEP students who remain at Kenyon. Other conclusions that can be drawn from this suggest that KEEP students are more likely to take time away from Kenyon and then return where non-KEEP students are likely to simply transfer away from Kenyon. Is this behavior of leaving and returning a product of the KEEP Program?
CHAPTER 5: LIMITATIONS

Though results do not appear to be overwhelmingly supportive, absence of evidence does not correlate with evidence of absence. The absence of significant improvements for one group or another does not necessarily mean that improvements do not exist. First and foremost, though a matching scheme was created by the selection committee, there is no way to determine what trajectory actual KEEP participants would have taken had they not participated in KEEP. Additionally, a more scientific matching scheme could have been employed had more subjects existed within the KEEP Eligible group. Furthermore, due to the size and nature of Kenyon College, a smaller number of students within the KEEP eligible limited matching capabilities.

Along that vein, a small number of total students at Kenyon leads to a smaller sample size of KEEP students. Proportionately, the KEEP students comprise on average 2.6 percent of the student body. This proportion is not very different from the proportion of students served by other institutional programs, but it certainly warrants a small size in terms of total number. If Kenyon were a larger institution like the Georgia Institute of Technology, the number of students participating would be much larger despite representing a similar proportion of the school population. These larger sample sizes lead to more powerful results. Additionally, a larger sample size would provide us with more information. If this researcher could expand the population of participants to include

2 During the selection of the KEEP committee, students are grouped together in like pairs based on ethnicity and academic ability. When one student turns down the offer to participate in the program, another student from similar background is chosen. For this study, students directly above or directly below KEEP participants in terms of the group ranking were chosen.
more students, there is a higher probability of attaining better results given the added data.

Another limitation is due to the selectivity of Kenyon College. Because Kenyon College is a highly selective institution, the variability in academic ability of the overall population is much smaller than at a larger, public institution. Because there is a smaller variability in the academic ability of the incoming students, it is more difficult to assess improvements quantitatively. The selectivity rate also leads to the absence of a representative population. The population of Kenyon bound students is much more narrow than the overall college bound population. Hence, the external validity is limited. That being said, other programs offered at dramatically different institutions have demonstrated some success. Because external programs operate very similarly to the KEEP program, there may be further external implications worth exploring.

Bias is a severe limitation of this study. Because this researcher is a member of the selection committee for KEEP students, bias cannot be avoided. However, using a committee to make selections and employing a matching scheme for the KEEP-eligible population reduces some of this bias. Also, the absence of statistically meaningful results suggests that attempts were taken by the researcher to combat bias.

An additional limitation is that no data is kept of students when they leave the college unless they plan on returning. Several students who did in fact leave the college and returned were still given a retention score of 1. A better measure of retention to reflect the movement in and out of the institution would help. It would also be useful to know if students who leave with no intent of returning plan on attending another institution or if they are no longer in college. If students continue in college, we could
suppose that the KEEP Program aided in their persistence efforts but would need to study that connection further.

Finally, no measure of student engagement was obtained. Because the program is designed not only to create academically successful students but also to create leaders within the community, it would be helpful to have some measure of community involvement. Quantifying community involvement is difficult, which is why a structural equation model would be preferred. With a larger sample size in subsequent years, this measure could come to fruition. Proposed variables that may influence the latent variable of community involvement are hours spent pursuing an extracurricular activity, leadership position(s) attained in clubs and on teams, awards and honors received throughout the year(s), and student perception of community involvement using a scored, qualitative survey. Certainly others measures of student involvement exist and Tinto’s model should be referenced in order to gain a more comprehensive picture of community involvement.
CHAPTER 6: FUTURE RESEARCH

Due to the vast number of limitations, future research is certainly encouraged. Among the most exciting aspects of future research is the promise of larger annual cohorts. During the summer of 2012, the Kenyon Educational Enrichment Program will double in size to include 24 students. The larger sample size will allow for much better analysis such as SEM. Additionally, since the program is relatively new and only encompasses one class of graduated students, future study is guaranteed to have more students and more substantive information as more KEEP cohorts graduate.

Additionally, socioeconomic status (SES) is commonly associated with college academic performance. Though the current database in admissions contains information about parental degrees, it does not include information about family income. Since income is a driving factor in SES, this researcher is advising family income information be obtained and recorded for future cohorts.

This researcher also advocates for a measure of faculty involvement. As the KEEP program evolves, more faculty members become involved with the program. There is a rise in advising clusters for KEEP students. These clusters are groups of faculty advisors who essentially advise collectively. There are pairs of faculty advisors who each have 4 first-year students assigned in their advising group. These two groups form an advising cluster. The motivation for advising clusters is to expand the number of students first years with whom first years interact on a regular basis in order to increase community engagement. Do advising clusters influence community involvement? If so,
is this involvement captures by participation in KEEP or does it enrich involvement otherwise expected of students who participate in the KEEP Program?

Including qualitative measures such as the KEEP experience survey responses would be very enlightening to this situation and would provide another lens through which to analyze the program. Unfortunately, this type of analysis is beyond the scope of the researcher. As more classes are taken and more techniques are learned, a qualitative analysis in conjunction with a more substantial quantitative analysis could change the nature of the results.

It would also be helpful to conduct a more expansive analysis on retention and persistence. This analysis could be as simple as including retention and persistence as observed variables that influence the latent variable, college success. Given the difference between retention and persistence rates of KEEP students and non-KEEP students, it would be interesting to learn more about why those differences occurred. What is the relationship between the KEEP Program and these variables because as the results stand now, an interesting relationship is developing that implies that KEEP may help students remain connected to Kenyon during time away so that they want to return in a future semester. Collecting more data from students who take a leave of absence from the College may help shed light on what is keeping these students connected to Kenyon: is it a KEEP tie, or is it some other issue?

Finally, as the program continues and as more data becomes available, additional variables can be analyzed such as 6-year graduation rate and percentage of students graduating with honors. We can also follow KEEP students as they navigate graduate school applications and career paths. Does participation in the KEEP program lead to an
increased likelihood of graduate school? Again, this will be difficult to measure given the high percentage of Kenyon students who pursue graduate study in general. Another question for future study would be how KEEP students interact (if at all) beyond their time at Kenyon. Does belonging to KEEP increase employment networks?
SUMMARY

Though this particular study was not as fruitful as anticipated, the number of questions that arose from the study as well as the increased awareness for the program was productive. As evidenced by the research conducted, Kenyon College is a difficult place to conduct a study due to the intimate nature of the community. Regardless of participation in the KEEP program, students experience small classrooms, frequent meetings with advisors, and regular contact with staff members. Because of the highly involved and integrated nature of the community, differences between KEEP students and non-KEEP students will likely be smaller in scale than at a larger institution where differences are broader in scope. With average first-year to second-year retention rates of over 90% and average 4-year graduation rates of nearly 90%, measuring differences in success is a challenge. Perhaps further study invoking an SEM could tease out how success is measured by including a combination of observable variables that may allow for a larger difference in success to be measured, rather than examining each observed variable in its own regression equation.

Ultimately, this quantitative analysis provided little guidance in terms of substantive, quantitative results. However, conducting this study raised scores of questions for future research. This research suspects that a more extensive study of the KEEP program conducted about 5-10 years from now will provide much more meaningful information than this study due to the growing data set as well as doubling the size of the KEEP cohort.
REFERENCES


