# THE INFLUENCE OF GENDER AND ETHNICITY ON ACHIEVEMENT AND ENGAGEMENT LEVELS OF UPWARD BOUND STUDENTS

By

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# CHAPTER I

# INTRODUCTION TO THE STUDY

Although there are many different types of academic enrichment programs across the United States, Upward Bound is one of the largest programs in the nation aimed at helping disadvantaged students enter and succeed in postsecondary education (Myers & Schirm, 1999). The present study examined the achievement and engagement levels of participants from an Upward Bound program located in northeastern Oklahoma in order to determine which disadvantaged populations are best served by the program.

## Background

The United States has committed itself to providing disadvantaged youth with opportunities to excel academically (Council for Opportunity in Education [COE], 2005). While the United States spends more on education than most nations of comparable size, its public school students continue to lag behind academically when compared internationally (Boehner, 2003). When students from the United States were compared to 20 other nations on general science and mathematics knowledge, they scored well below the international average on both topics. In fact, U.S. students only scored better than 2 of the 20 nations studied (U.S. Department of Education, 1998).

Berliner and Biddle (1995) suggest that the apparent crisis in the nation's educational system is being misrepresented by the use of standardized test scores. The authors claim that the achievement levels of traditional, middle and upper class students in the United States are comparable to those of students in other high-achieving nations, such as Korea and Taiwan. However, the United States does not fair so well when the data focuses on the lower end of the socioeconomic spectra. Berliner and Biddle believe that the poorest areas in the United States are pulling down the national average because students in these states consistently score low on achievement tests. Berliner and Biddle's revelations assist in justifying the nation's commitment to helping the most disadvantaged children in society improve academically. These disadvantaged youth are apparently struggling to keep up academically not only within the nation, but within the international community. At a time when the U.S. is fighting to keep a respectable position in the international educational community, programs aimed at helping these disadvantaged students are warranted.

During the presentation of the 2001 Presidential Awardees for Excellence in Mathematics and Science Teaching, educators from various levels of the public school system in the United States were chosen to receive this prestigious award, and discuss their views on the governments' potential to improve education in secondary institutions. During the ceremony an interesting conclusion was made in reference to the achievement of American students: "Some of the factors that are correlated with student performance are variables that schools cannot control, such as student household income, and parental educational level and involvement" (U.S. House of Representatives, Committee on Science, 2002, p. 9). This statement suggests that the public school systems are not

capable of addressing all of the relevant issues related to low student achievement. Several academic achievement programs known collectively as TRIO, including the program of interest in this study, Upward Bound, were introduced in 1965 to help ensure that America's most at-risk populations received equal access to and opportunities in education (Balz & Esten, 1998).

The term at-risk is used generously throughout achievement research to refer to the individuals most likely to achieve at lower levels academically. Adams and Singh (1998) introduce the term at-risk by suggesting that the concept implies certain societal-based traits of the individual such as having low socioeconomic status or being an ethnic or social minority. The authors suggest that many of these traits are ascribed to the individual, and cannot be easily changed. In this study, ascription means that an individual was assigned, typically at birth, a particular trait or quality by the status of his or her parents. These ascriptions include certain concepts such as social class, economic status, race and gender, among others.

In the current study, the term at-risk is used to refer to students that are classified as having any one of the following characteristics: low socioeconomic standing, ethnic minority, social minority, or first generation. First generation refers directly to the level of education held by the participants' parents. In order to be classified as first generation, neither parent can have a four-year degree before the student is enrolled in the program. All Upward Bound students must qualify for the program by being either first generation or low income. Income levels are determined by federal guidelines, and require that participants' families have a "…taxable income that is less than 150% of poverty level…" (Cahalan & Curtin, 2004, p. 20). The qualification status of students can be first

generation only, low income only, or both first generation and low income. Regardless of qualification status, federal guidelines require that at least two-thirds of all participants in Upward Bound programs are both first generation and low income, and that the other one-third are either first generation or low income (Cahalan & Curtin). This guideline helps to ensure that the program is serving one of the neediest populations in any given area.

Upward Bound is a federally funded academic enrichment program aimed at improving the achievement and engagement levels, graduation rates, post-secondary enrollment, and success of certain at-risk high school students (Cahalan & Curtin, 2004). The students participating in the Upward Bound program have been identified by researchers as some of the most academically disadvantaged or at-risk students in the nation (Armesto & McElroy, 1998). The program is designed to positively influence the achievement levels of these disadvantaged groups. Studies on programs affecting individual disadvantaged youth may provide valuable information on formulating activities aimed at improving the engagement and achievement of these groups. Activities that are engaging to African American students may be very different than those that engage Native American populations; therefore, a balancing act must occur on the part of the program to ensure that all at-risk youth are represented and offered engaging activities aimed at improving their achievement levels.

A study by the US Department of Education (2002) reported that “The Upward Bound Program provides fundamental support to participants in their preparation for college entrance” (p. 17). Therefore, while the program is dedicated to helping its participants complete secondary education, the organization maintains an overall effort to

prepare the students for post-secondary enrollment and success. In this effort, the program staff works with students to improve their performance in high school, ensure that they maintain on a college preparatory track throughout their secondary education, and ultimately, helps them on their quest for college funding, entrance, and completion. Whether focusing on helping the participant to succeed in high school or enroll in college all of the program goals are best served by increases in the students' achievement. Thus, a majority of all activities implemented by the UB program are aimed at engaging the students in an effort to increase their overall achievement.

Upward Bound uses a variety of resources and services in an attempt to meet program goals. Most UB programs require students to participate in activities during the school year and the summer that provide the students with academic and college training and/or preparatory activities and information (Cahalan & Curtin, 2004). According to the grant that guides the program of interest in the present study, students are required to attend a full day meeting one Saturday per month that focuses on academic, cultural, and/or personal improvement. Likewise, each student is required to attend a two hour session of supplemental instruction or tutoring monthly. In addition, all students who have C's, D's, or F's are required to attend bi-weekly tutoring, and are offered personal tutoring as needed. Finally, each participant is required to turn in a grade report each month that helps the program keep track of their academic progress. The activities listed above are only those activities that each participant is required to attend. RSU Upward Bound offers a variety of voluntary or by-request-only activities such as tutoring, academic counseling, and college tours.

The requirements for high school completion are often much lower than the requirements for college entrance (Greene & Winters, 2005). Greene and Winters (2005) stoically report that "Many are surprised to learn that a student can graduate from high school with a regular diploma and still lack the necessary academic qualifications to attend even their state's public university" (p. 9). Therefore, without guidance, many students who have graduated from high school did not take the proper classes, pass needed college entrance exams (or even know about them at times), make the financial preparations, or understand the possibilities of college attendance. A review of high school drop-out rates, college readiness levels, and college enrollment rates confirms a lack of knowledge about higher education. For example, college readiness rates for Oklahoma from 2002 indicate that African Americans and Hispanics fell far behind their Caucasian counterparts (Greene & Winters). Only 52% of Hispanics and 56% of African Americans regularly graduate from high school, while 78% of Caucasians graduate (Greene & Winters). In 2000, Native Americans were struggling to keep up with the majority, as only 57% made it to high school graduation, while the national graduation rate for Caucasian students was significantly higher (Green & Winters, 2002).

When at-risk students do make it to graduation, they are often not ready for college. In 2002, only 23% of African American high school graduates and 20% of Hispanic graduates were deemed ready to enroll in college. And yet, in the same year, at least 40% of Caucasian graduates were reported as being prepared for college entrance (Greene & Winters, 2005). One account for this discrepancy in readiness may be that some minority students are failing to enroll due to a lack of preparation or knowledge about access to institutions and financing. Providing preparation and knowledge about

higher education is one of the many objectives of the Upward Bound program. Numerous other reasons could be suggested to explain why so many students, particularly minorities, are not prepared for college. Many studies have focused on this phenomenon in terms of numbers, that is, studies have shown that minorities tend to graduate at lower rates and/or drop out at higher rates, on average, than their non-minority counterparts (Calabrese, 1990; Carnoy, 1994; Driscoll, 1999; Rumberger, 1987). The revelation that minorities are dropping out at higher rates suggests that they are entering post-secondary education at lower rates as well. For example, Greene and Winters note that there is little difference in the number of students who graduate with the label college ready and the number that enroll in college the same year. The Upward Bound program works extensively to improve its participants' chances of both completing high school and enrolling in some form of post-secondary education (Cahalan & Curtin, 2004).

Although the studies presented above give a general picture of the low achievement levels of some of the nations most at-risk ethnicities, these studies do not designate what proportion of those students that did make it to graduation were participants of college preparatory or academic achievement programs like Upward Bound. However, research does indicate the positive effect that the Upward Bound program has had on the overall achievement of its participants. In the 2005 school year, 100% of the UB participants from the program of interest located at Rogers State University (RSU) graduated from high school. Of those, over 90% went on to some form of post-secondary education. According to Armesto & McElroy (1998) previous research has reported that 90% of Upward Bound graduates go on to some form of post-secondary education compared with 72% of the general population. Likewise, 74% of Upward

Bound graduates began attending and 40% graduated from four-year institutions compared with 43% of the general population attending and 5% graduating.

In terms of academic achievement research, the Upward Bound program is appropriate for several reasons. First, it gives researchers a pre-defined group of students, including their demographic and educational information. Additionally, it provides the opportunity for researchers to study the influence of numerous planned activities on achievement and engagement levels of these at-risk populations. These activities include tutoring, academic advising, cultural awareness, group socialization, and college prep among others. Research on the UB program of interest, housed at Rogers State University (RSU) in Claremore, Oklahoma, is important in determining what groups the program influences. If research shows that Hispanic students are responding extremely well to the Upward Bound program, but they only make up a small proportion of the total participants, recruitment practices may need to focus on Hispanic Americans. Likewise, if the research finds that males are responding well to program services, not only will this open the door for research to figure out why, but it may influence the general acceptance policies, as females outnumber males in the UB program of interest.

## Theoretical Frame

Two academic concepts provided the framework for examining students in the UB program, academic achievement and engagement. Academic achievement has been a topic of interest to researchers for some time. Even a brief search of the topic reveals hundreds upon thousands of studies - not to mention definitions of the term. According to

the Oxford American Dictionary achievement refers to accomplishing or gaining by effort. Therefore, academic achievement refers to accomplishments or gains made by an individual in their educational or academic endeavors. Engagement has been defined as "the student's psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote" (Lamborn, Newmann & Wehlage, 1992, p. 12). In the current study, engagement was specific to the participants' investment in and effort directed towards actively participating in the Upward Bound program.

## Academic Achievement

Achievement literature reveals numerous techniques for measuring achievement; and yet, the research reveals no general consensus on a standard measurement for academic achievement in research. Grade point average or GPA is often used in academic research as a measure of achievement. And yet GPA is based on, to some extent, a teacher's evaluation of the students' abilities. GPA is the result of a teacher's scoring methods, rules for assignment completion, and even personal interest in the student. This makes GPA, as a measure of achievement, extremely subjective. The subjectivity of this measure can lead to a measurement revealing less about students' achievement and more about students' teachers. Subjectivity of a teacher's evaluation of student achievement levels is often cited as an inhibitor of accurate evaluation (Coladarci & Hoge, 1989). Coladarci and Hoge state that teacher evaluations of achievement are generally reliable, but offer little information on viable methods for improving achievement levels in

students, and are subject to widespread distrust, with assumptions of bias and unreliability. Like teacher evaluations and GPA achievement tests alone offer only a small insight into the achievement levels of students. The scores on traditional achievement tests cannot be considered a true indication of students' academic achievement (Lawton, Paris, Roth & Turner, 1991). Variables such as whether the student had breakfast or how they felt on the day of the test can play a major role in their achievement scores on these tests.

The suggestions derived from these revelations guided the attempt in the present study to combine more than one measure of academic achievement. GPA and achievement tests introduce different possibilities for error, as well as measure different aspects of students' achievement. GPA measures students' achievement in the classroom including assignment comprehension and completion, class attendance, and test scores. The achievement test used by the UB program, the Test of Adults Basic Education (TABE) measures students' overall achievement in four main areas: literature, reading, math, and spelling. In order to gain greater insight into the achievement variable, the definition of achievement was broadened to include two components. Achievement was measured as the product of the participants' most recent score on the TABE and their cumulative GPA. In current research GPA and achievement tests are heavily relied upon as measures of academic achievement; however, they have typically been relied upon as independent measures, regardless of their flaws. The significance of the combined effect as a measure of academic achievement will be important for future research in this area.

## Academic Engagement

In the present study academic engagement is defined as the student's investment in and effort directed towards successfully participating in and completing the Upward Bound program. Overall participation in the program suggests the students' psychological investment in the program, measured by the students' engagement in the opportunities provided to them. Upward Bound provides a variety of activities including; tutorials, seminars, field trips, supplemental instruction, and cultural events in and outside of school that are intended to positively influence the engagement levels of participants. The efforts of program staff include organizing activities that are inviting, stimulating, and gratifying. In addition, the activities are created in an effort to not only promote engagement, but offer tools for academic achievement. If activities are not engaging, student participation levels drop which can inhibit the program from influencing the achievement of its participants.

Various approaches have been used to measure student engagement levels. The justification for so many measures of engagement is most likely due to the number of definitions used to define it over the years (Chapman, 2003). Chapmen goes on to suggest that two distinct classes of definitions have emerged in the research on engagement. The first class of definitions pertains to the students' willingness to participate in the normal, everyday activities of school such as going to class, turning in assignments, and following directions. In an adaptation of the definition to Upward Bound, measurements for engagement in this class of definitions includes the students' willingness to participate in required UB activities such as after-school tutoring, supplemental instruction, and

Saturday meetings. Likewise, following instructions and meeting general requests such as turning in paperwork or monthly grade reports reflects upon student engagement. The other class of definitions focuses on cognitive and affective indicators, as well as the students' behavior. According to this class of definitions the students' willingness to behave appropriately and to treat staff and peers respectfully, over time, is an indicator of engagement levels.

## Engagement and Academic Achievement

Because the Upward Bound program is designed to improve achievement levels, students' investment in the program, or engagement, should ultimately lead to increased levels of achievement. According to Chapman's descriptions engagement can be determined by students' dedication to school or other activities of interest, as well as their participation levels in school related activities. These factors of engagement can be related to the students' levels of achievement. If a student is going to class and turning in assignments, he/she will have a higher probability or likelihood of achieving more than if he/she was not going to class or was turning in assignments infrequently. Similarly, if the student is attending Upward Bound meetings, completing requested tasks, and actively participating, he/she should have a higher probability of improving achievement. Therefore, students' levels of engagement in the Upward Bound program should be reflected in their academic achievement scores.

## Statement of the Problem

Studies have reported that the United States is struggling to maintain a respectable position in the international educational community. In addition, research suggests that at-risk students across the nation are negatively weighting the test scores at the national and international levels. The influence of at-risk students on test scores is likely to increase as the populations of those considered most at-risk continues to grow exponentially. In order to address the problem of low achievement levels in the nations most at-risk populations, studies are needed that focus specifically on these groups.

Upward Bound programs work with at-risk students to improve achievement, thereby providing a population of at-risk students on which achievement studies can be conducted. Research has reported a connection between certain ascribed characteristics of individuals and lowered academic achievement. For example, students from low income families continuously display lowered levels of achievement (Drummond & Stipek, 2004). In addition, poverty, race, and culture are positively correlated with academic failure (Borman & Overman, 2004), and low achievement levels have been associated with ethnic and social minorities (Adams & Singh, 1998). Furthermore, first generation students often attend college less frequently and are obviously at a disadvantage when compared to peers whose parents attended college (Chen, 2005). Thus, the research suggests that first generation, low income students, ethnic and social minorities are continually achieving at lower levels. Upward Bound serves first generation and low income students specifically; however, there are a variety of racial and gender groups

within the population thereby providing an opportunity to study the influence of all of these variables.

Ethnicity, gender, and qualification status were of specific interest because of their direct relationship to low achievement levels found in research. This relationship suggests that specific ethnicities, genders, low income students, and/or first generation students are achieving at lower levels. The influence of the program's efforts of engaging these students on their achievement levels is important to understand in order to begin improving the achievement levels of the nation's most at-risk students.

## Significance

At a time when our nation needs to make a major statement about the academic standing and potential of our students, this analysis presents information and implications that could be used as a path for progress in this attempt. A major objective of the present study was to provide the RSU Upward Bound program (and those of similar proportions) with valuable data regarding the achievement and engagement of distinct students. This revelation was sought in order to allow the RSU UB program to increase internal awareness and create program recruitment practices and objectives in line with the research findings. In addition, the results can offer policy makers, researchers, and others important information on measuring academic achievement and engagement of at-risk students, and considerations for program creation and implementation. Understanding which populations are the most engaged in achievement programs, or for that matter, are the least engaged, can help programs review their activities, as well as recruitment

practices, in relation to specific demographics such as gender, ethnicity, and qualification status.

In addition to understanding more about the engagement and achievement levels of specific at-risk groups, determining the correlation between academic achievement and engagement levels is important. Understanding the relationship between engagement in UB activities and participant achievement has the potential to encourage future studies on the influence that specific activities or opportunities offered by the program have on its participants' engagement levels. Results from studies encouraged by the current research could help to form implications about the effects of specific activities indicating whether these activities are engaging the participants, and whether this engagement is thereby helping to increase student achievement in the at-risk populations served by the UB program.

## Purpose of the Study

The purpose of this study was to investigate the influence of certain demographic variables of RSU Upward Bound students on their engagement and achievement levels. In order to investigate this relationship, the correlation between engagement in Upward Bound and student achievement was determined. In addition, gender, ethnicity, and qualification status were to be examined in relation to student engagement and academic achievement. Gender was evaluated in terms of male and female participants. The levels for ethnicity initially included African Americans, Hispanic Americans, Native Americans, and Caucasians. Qualification status referred to whether the student was first

generation only, low income only, or first generation and low income. Ultimately, the proposed analysis was to look at the relationship between achievement and gender, achievement and ethnicity, and between achievement and gender with ethnicity. In addition, the proposed analysis was originally designed to study the relationship between engagement and gender, engagement and ethnicity, and engagement and gender with ethnicity.

## Research Questions

From the data gathered for the participants of the Upward Bound program located at Rogers State University the following research questions were addressed:

1. Is there a statically significant relationship between academic achievement and engagement in UB?
2. In what ways do ethnicity, gender, and qualification status affect the achievement levels of UB participants?
3. In what ways do ethnicity, gender, and qualification status affect the engagement levels of UB participants?

## Assumptions / Limitations

The present study is limited by several factors. First, the subjects for the study were selected from one Upward Bound program in northeastern Oklahoma, limiting the generalizations that can be formed. The information obtained from Upward Bound

participants in a limited area of Oklahoma may not be generalizable to an entire nation. However, the various strategies used by the Upward Bound program studied are similar to those used in programs throughout the United States. Therefore, programs with similar gender and/or ethnic make-ups may be able to directly integrate the findings, as well as anyone in the educational community who is willing to replicate the study on their own population of interest. Hopefully, the results spark an interest in knowing what at-risk groups Upward Bound programs can affect in terms of engagement or achievement.

Other potential limitations include achievement and engagement variables. Both variables are new to research; therefore, there are no past indicators of reliability. Achievement was determined as the product of GPA and TABE scores. By combining two measures the possibility for error is increased. However, the combination of the two scores permitted a much broader definition of the term, which allowed for greater insight into the students' overall achievement. The engagement measure consisted of a combination of the students' engagement in the academic component and their engagement in the summer component. Only required activities were included in the engagement measure; that is, activities initiated by the student or requested by academic or personal counselors were not considered in the engagement score. Although the students' engagement could realistically be influenced by non-required activities, the measure of engagement in this study appears applicable to the study of engagement's influence on achievement. Finally, the researcher is a current employee and alumni of several TRIO programs. This personal involvement in the program may lead to some bias. However, ethical and procedural guidelines were followed with care to decrease potential bias.

## Summary

This chapter presented an introduction to the current study including Upward Bound, academic achievement and engagement. The nation is currently struggling to keep a respectable position internationally on standardized test scores and other academic endeavors. Unfortunately, at-risk students across the nation appear to be negatively affecting these scores. Studies on the achievement of these at-risk populations will hopefully lead to increases in their overall achievement, and ultimately, in the nation's academic placement internationally. Upward Bound serves some of the nation's most at-risk students in an effort to improve their academic achievement. In this effort, UB attempts to engage these students through a variety of academic, social, and cultural activities. The purpose of this study was to examine the relationship between the ethnicity, gender, and qualification status of UB students in relation to their engagement and achievement levels. This study offers an examination of the differences in the engagement levels of these various students in relation to their academic achievement.

# CHAPTER II

# REVIEW OF RELEVANT LITERATURE

The purpose of this study was to investigate the influence of certain demographic variables of Upward Bound students on their engagement and achievement levels. This chapter provides an introduction of the research related to the variables of the study. First, the concept or theory known as opportunity to learn is introduced, followed by a discussion of the research related to Upward Bound, academic achievement, academic engagement, and the relationship between achievement and engagement in Upward Bound.

## Opportunity to Learn

A major concern of educational researchers is to understand the effect that opportunity has on achievement (Harrison, 1969). This concern continues to exist today, made evident by the numerous studies published each year. The meaning of opportunity to learn has transformed as it has made its way through the major social and cultural changes in the United States (Baratz-Snowden, 1993). The initial theories pertaining to opportunity to learn arose during the 1950's but have continued to peak interest and develop theoretically. One of the reasons that equal opportunity has been so fluid in terms

of its definition is that the court system in the United States has played a large part in defining it (Baratz-Snowden). The placement of the definition in the hands of a few court officials created a definition that was quantitative in nature; that is, components of equal opportunity such as the number of books available or amount of money spent per student came to define the term (Baratz-Snowden). The first definitions of equal opportunity were created around the idea of individuals being separate but equal. However, in 1954 the courts recognized the belief that separate would never be equal, ultimately leading to the desegregation of the American schools (Baratz-Snowden). The next evolution of the concept began an era in which opportunity to learn would be defined in terms of allocation of resources and integration; the belief was that the input of equality in resources and quality of education would lead to the output of greater academic achievement (Baratz-Snowden). That is, if everyone were given equal opportunity to education and educational resources, more students would succeed. However, at that time systems based on this theoretical assumption failed, most likely due to the remnants of racial tension and turmoil in the United States present during this time in history. Even though slavery was long abolished, and equal rights were supposed to be common policy in America, government officials, educators, and even researchers still sowed the seeds of racism, failing to truly offer equal opportunities to all (Baratz-Snowden).

According to Baratz-Snowden (1993) the next major change occurred in the nineties when the idea of allocation of resources and integration was clearly replaced with a focus on the "…kind, quality, and duration of education services" (p. 317). The basic assumption was that if students were going to be held accountable for learning, the schools must provide opportunities to learn for all. Likewise, the nation's place in

opportunity to learn had to be active in order to ensure that all students had equal opportunities in education. Today, the reality of inputting equality into our educational system in hopes of increasing academic achievement is much more realistic. If one accepts the definition of opportunity to learn to mean equality in education, then it would appear that low income, first generation, and ethnic minorities that are achieving at lower levels in comparison with the general population, are not receiving equal opportunities in education.

In terms of deciding which groups have the greatest need for increased opportunities one can examine the low achievement rates of particular groups. For example, social minorities are often linked to low academic achievement. The term social minority can refer to a variety of individuals including homosexuals and lesbians, pregnant teens, a specific gender, the physically or emotionally handicapped just to name a few. Minorities in general and women in particular are listed as continually achieving lower in math and science than other groups similar in comparison (Oakes, 1990). Because of these lowered levels of achievement the suggestion can be made that these students are offered less opportunities than their counterparts. Several specific groups are often cited in research as having less educational opportunities. These groups include ethnic minorities, low income students, and students whose parents have low levels of education.

## Ethnic Minorities

Ethnic minorities struggle with learning opportunities. Researchers have made various conclusions pertaining to the achievement of ethnic minorities. Ethnic minorities are often the target of academic stereotypes, which has the potential to affect their academic performance; however, even when the effect of stereotypes is accounted for, minorities continue to suffer academically (Oyserman, Kemmelmeier, Fryberg, Brosh, & Hart-Johnson, 2003). Other research suggests that particularly with African Americans, the academic gap is the direct result of a lack of opportunity (Epps, 1995). For example, a lack of parental involvement has been identified as a major factor for lowered academic achievement in many African American students (Trotman, 2001). Academic stereotypes, lowered achievement scores, and lack of parental support are just a few of the barriers of opportunity faced by many ethnic minorities.

## Low Income

Low income students also struggle academically and lack educational opportunities. For example, research suggests that low income families are less likely to introduce their children to information related to high school completion and post-secondary enrollment when compared to more affluent families (Drummond & Stipek, 2004). Parents in low income families tend to report that they value education; however, they often fall short when it comes to measures of their actual involvement in their students' quests for knowledge (Drummond & Stipek, 2004). Information about both of

these major academic milestones (high school graduation and college enrollment) is a reflection of opportunity. That is, those that have access to information on high school completion and college enrollment have an opportunity that those without it do not.

### Parental Education

The level of education (or lack thereof) of individuals' parents is considered, by some, to be one of the most accurate indicators of educational achievement (Hahns-Vaugh, 2004). The less education a parent has, the less likely that parent will share vital academic information or open the door for opportunities to learn. First generation students have been found to attend college less frequently and are at an apparent disadvantage when compared to peers whose parents did attend college (Chen, 2005). Thus, first generation students in the United States lack educational opportunities and struggle academically.

## Upward Bound

Upward Bound is the first of the three original programs that make up what are known as the nations TRIO Programs (US Department of Education, 2002). In 1964 President Lyndon Johnson was waging what is known as the War on Poverty. As part of his war the Economic Opportunity Act was formulated and passed. This act known as the EOA created the academic enrichment/college prep program labeled Upward Bound (UB). The term TRIO was coined after the implementation of two additional academic

enrichment programs: Educational Talent Search (ETS) and Student Support Services (SSS). These programs were established by the Higher Education Act and the Higher Education Amendments, respectively. The addition of ETS and SSS created three programs or a trio of academic enrichment programs.

Although known as TRIO the organization is now composed of more than three programs, as it has expanded to reach many more people. In 1972 the Educational Opportunity Centers were added, and in 1976 the Training Program for Federal TRIO Programs and the Robert E. McNair Post-baccalaureate Achievement Program were added. In 1990 the Upward Bound Math-Science Program was implemented. In 1998, the Higher Education Amendments introduced the TRIO Dissemination Partnership Program. Each program provides an additional and vital avenue for various disadvantaged groups. These groups include a variety of individuals from students who qualify as low income to adults returning to institutions of higher education. However, the first program, Upward Bound, will be the program of interest in this study. Not devaluing the significance of the other programs the focus will now shift to the individual development, practices, and participants of Upward Bound.

The Upward Bound program serves the nation's most disadvantaged youth, many of which are denied educational opportunities due to poverty, racial or ethnic disadvantages, or lack of parental education or support (Armesto & McElroy, 1998). Before the most disadvantaged populations in the United States became of interest to government officials, educators, and others, they were only a small minority of the population (Armesto & McElroy). A variety of situations contribute to the continued expansion of some of the most disadvantaged groups in society; however, immigration is

a large contributor to the influx of disadvantaged students into the school systems. The disadvantaged groups in the United State were not initially worried about because the nation was easily able to absorb them into low paying jobs or the unemployed without any severe economic consequences (Armesto & McElroy). Today, this is not the case. The at-risk populations in the U.S. that were once the minority are growing faster than many other groups in the nation; many estimate they will soon be the majority population (Armesto & McElroy, 1998). The need to address the economic, social, and academic disparities experienced by the nation's fast-growing minorities is a serious problem; the nation can no longer afford to place these individuals onto the welfare system and does not have enough low-skilled positions in the face of technological advances, illegal immigration, and international labor campaigns.

Upward Bound serves low income and first generation high school students. Many students who come from families in which neither parent has a four-year degree will have household incomes considerably less than their peers whose parent(s) have four year degrees (Bui, 2002). Thus, a large proportion of the students in the Upward Bound programs are both first generation and low income. The fact that many of the students in the program qualify on both levels (first generation and low income) may be positively associated with the education level of their parents. That is, a parent's education level can be accepted as a pretty good predictor of household income. This is one of the reasons why so many of the UB students who qualify based on income also qualify as first generation students.

Research on poverty levels suggests that it is likely that low income individuals will also be ethnic minorities. When compared to the general population in Oklahoma, a

significantly higher number of ethnic minorities, particularly Native American, African American, and Latino minorities, are impoverished (Oklahoma Institute for Child Advocacy (OICA, 2002). Oklahoma was also reported as having one of the highest percentages of children living in poverty when compared to the other 49 states (OICA). Because Oklahoma has a high number of individuals living in poverty, and a higher number of impoverished students in Oklahoma are ethnic minorities, it can be suggested that many of the poorest individuals in the state are also ethnic minorities. These poor minorities are not fairing so well in the academic arena. In addition to other personal, social, cultural, and economic obstacles, the OICA found that children from low income households are more likely to do poorly on standardized tests, less likely to complete high school or receive health care, and are more likely to die before reaching adulthood then non-poor children. In 1982 the high school drop out rate for poor minorities in the United States exceeded 50% (Lamborn, et al, 1992). This figure is surprisingly close to statistics reported in 2002 that found only 56% of Oklahoma's African Americans and 52% of its Latino students made it to graduation (Greene & Winters, 2005). Native Americans also faired poorly, graduating at a lowly 57%, while the majority population graduated at 78% (Green & Winters, 2002).

In addition to recruiting first generation and low income students the UB program of interest in the present study also looks for students who have low GPA's and/or tests scores in the core subject areas of reading, writing, and/or arithmetic. This objective is in line with the national program goal of providing students with assistance in reading, writing, and help in other subjects that are directly related to their success in entering and completing post-secondary education (Council for Opportunity in Education, 2005).

Although low GPA or test scores are not a requirement for program participation, a disproportionately large number of applicants who meet one or both of the requirements (first generation or low income) for program participation are struggling academically. Many applicants who qualify for the Upward Bound program are also struggling academically due to the educational barriers that are often present in families that are labeled low income, ethnic minorities, or first generation. The assumption that these students are struggling academically can be justified by the fact that researchers have identified UB students as some of the most academically disadvantaged or at-risk students in the Nation (Armesto & McElroy, 1998).

## Academic Achievement

Academic achievement is hard to define based on previous research because it is typically reduced to the confines of the study in which it is presented. And yet achievement appears to be more accurately measured when it is specified for a particular group within a specific study. A review of the vast literature available on the construct of achievement has confirmed the notion that no single definition would suffice to explain achievement in terms of an all-inclusive meaning. Evaluating achievement using the population under study appears to be a more realistic endeavor then finding a single definition and/or measure that is used in a variety of achievement studies (no consensus exists to date). Even though no specific measures have been identified and widely accepted the available research on achievement is important to understanding its position in society, as well as attempts to measure and ultimately improve it. It is unlikely that a

single measure for achievement will ever gain widespread acceptance; however, the current trend of using the population under study to develop the most appropriate achievement measure appears to be working.

In addition to the complications of finding an appropriate measure, some researchers suggest the need to steer away from particular measures of achievement as independent measures. In a 2001 study of traditional academic assessment methods, researchers suggested that achievement tests do not offer a clear picture of students' academic achievement or learning abilities (Chudowsky, Glaser, & Pellegrino, 2001). In addition, most achievement tests do not take into account individual differences in test taking strategies, skills, and anxieties. Some students truly struggle when it comes to test taking. Students that struggle with test anxiety may be able to rattle out the formula for respiration any time of the day, but put them in a timed situation and call it a test and all of the sudden the pressure consumes them, causing them to forget what was so readily available just hours before! Test anxiety is becoming an all too common complaint experienced by thousands of high school students each year. In a study funded by the U.S. Department of Education it was determined that some 55% of high school students experience significant test anxiety. Unfortunately most of the strategies on improving test anxiety relate to preparation and study. An individual's inability to study and/or prepare is one aspect that makes standardized tests particularly different and possibly more difficult when compared with classroom tests. With a classroom test one can take recommended precautions, such as developing good study habits or organizing materials (Landberger, 2005) to improve anxiety and ultimately scores. However, with standardized tests only general steps can be taken to avoid severe anxiety. Thus,

achievement measures based on standardized test scores alone do not appear to accurately reflect academic achievement.

Grade point average (GPA) is another measure commonly found in achievement studies. GPA usually consists of the students' overall achievement in all of their classes. One immediate problem with using GPA as a measure of academic achievement is that all subjects are included in this measure; from band to gym. This means that students' GPA can be decreased by their poor athletic abilities, inability to bake a pie, or greatly improved by their extraordinary singing voice. Although accomplishments in band, athletics, and other areas are certainly achievements, they are not necessarily academic achievements. In addition, GPA is based on the subjective grading of the students' teachers, and ultimately can be dependent on other students' grades when the curve is implemented.

The fact that independent measures of achievement appear to lack the ability to provide an accurate picture of students' overall achievement levels leads to a dilemma: how do researchers measure achievement? Due to the evidence that individual measures of achievement may lack the ability to offer a truly accurate picture of student achievement, and the suggestion that the best measure of achievement is usually developed from the population at hand, achievement in this study became defined as a product of two variables: GPA and a standardized test. Defining academic achievement in terms of the product of two measures was justified by suggesting that the use of two common measures of achievement could help to reduce the bias found in single-measures of academic achievement. That is, this study attempted to use another variable in addition to a standardized test to gain a more accurate insight into the achievement levels of the

participants. Although better measures for achievement may exist within the confines of the available data, measuring GPA and achievement test scores appeared to be the best solution to eliminate some of the bias found in individual measures.

The Test of Adults Basic Education (TABE) was the standardized test chosen for the achievement measure. The TABE is used as an assessment tool for the Upward Bound program. The test is administered annually to all participants as a pre/post measure for each grade. The test is given before a participant enters and/or after a participant completes the $10^{th}$, $11^{th}$, and $12^{th}$ grade. The goal of the test is to provide data on the students' overall achievement, in addition to providing UB staff with a comparative reference to other scores obtained from the public school system and other venues. The TABE test measures four academic subjects including math, reading, literature, and spelling. Unlike the students' GPA, the TABE score is not a reflection of how many assignments were turned in or how hard the student studied. Instead, the TABE measures the students' general, overall achievement in several core curriculum areas. By recording the scores from the students' TABE tests at the end of their current year in the program, and multiplying that by their end of year GPA, a more detailed measure of academic achievement may be obtained than if either GPA or TABE scores were collected individually as measures of achievement.

## Academic Engagement

According to Lamborn, Newmann, and Wehlage (1992) three major factors influence a student's academic engagement. The need for competence, amount of

membership experienced, feelings of authenticity, or how authentic students feel the work or activities they are asked to complete are. Need for competence refers to students' feelings about their abilities or competence in general. Thus, students who feel that they are capable and/or able to do well at one or more activities, particularly those related to achievement, will feel competent and; therefore, will be more engaged academically. Lamborn et al, note "the need for competence has been recognized as one of the most powerful bases for human action and motivation" (p. 19).

Academia appears to offer students a variety of opportunities to experience competence from knowing the answer when called on to receiving one's desired score on a test. However, when one considers that competence is related to feelings of being able or capable of performing or doing, there are numerous other activities that can improve students' feelings of competence. Sports, arts, and even social relationships may provide a student opportunity for competency in certain areas. The more activities available the greater the chance the students will be able to participate and ultimately feel engaged. However, American schools do not always focus on integration activities, leaving those with ethnic barriers, such as language, out in the cold.

Membership is another important aspect in the quest for student engagement (Lamborn, et al. 1992). In order to be academically engaged a student needs to feel comfortable and accepted, needs clear goals or objectives, needs to feel that the school environment is fair and safe, and needs to feel respected within the school environment. Lamborn et al, suggest that in order to emphasize school membership, the environment must help to clarify the purpose, demonstrate equity, provide support, as well as provide opportunities for each student to succeed in some capacity. All entailed in a caring, open

environment. The goals of most secondary institutions would correspond with providing opportunities in a safe, secure environment; however, these objectives are much easier said than done. Safety and security have, in at least the last 20 years, become about security guards, metal detectors, and other personally invasive strategies. Due to the increase in media attention to school violence, many schools are focusing more and more time on the physical safety of the students. The true goals of personal security, purpose, and equity, appear to get lost, at times, in the effort to provide a physically safe environment.

In order to feel as if they are members of the school environment students need a reliable support system, leaders, and friends. They need feelings of security, both physically and emotionally, and most importantly they need to know the purpose of their membership. That is, why are we here? The first goal, having supportive individuals available, has unfortunately become much harder to find in the last decade as class sizes have become increasingly larger, and teachers have become progressively more overwhelmed with responsibilities far above and beyond the duties of educating (Blatchford & Mortimore, 1994).

Finally, Lamborn et al, state that authentic work influences the students' academic engagement. The authors report "We use the term authentic work to characterize tasks that are considered meaningful, valuable, significant, and worthy of one's effort, in contrast to those considered nonsensical, useless, contrived, trivial, and therefore unworthy of effort" (p. 23). The authors note several aspects of work that may affect authenticity including extrinsic and intrinsic rewards, connection to the outside world, prompt feedback, collaboration

abilities, and flexibility. Unfortunately, a host of political, social, and educational difficulties influence the lack of authentic work that students are exposed to. Namely, the focus on standardized testing in the public schools appears to be inhibiting creativity and critical thinking; thereby, reducing several of the main components that can foster authenticity. That is, standardized tests force educators to focus on much broader and more superficial coverage of the material in an attempt to prepare the students for a test that even the teachers are often unsure what will be asked (Berliner and Biddle, 1995). It is much harder for teachers to influence ownership and authenticity when they are forced to work under the often debilitating restraints of local, state, and national school board exam and curriculum requirements. For example, many state legislatures have actually enacted policies or laws that rank schools, and ultimately fund schools, based on their performance on standardized tests (Berliner and Biddle). All of these factors inhibit the ability of the schools to positively influence the authenticity of the classroom and of education in general.

## Achievement and Engagement

According to the National Association of School Psychologists, academic engagement refers to a student's level of participation in academic related activities, his/her identification or feelings of membership, and the belief in and acceptance of the values of the academic atmosphere. Engagement is; therefore, an academic value that, particularly when in combination with academic motivation, should lead to higher levels

of achievement. If a student is participating at higher levels, she/he feels a sense of membership at school or within an organization such as UB, and accepts the values of the institution (which includes maintaining a certain level of achievement); the individual will likely have higher levels of engagement, and in turn, higher levels of achievement. The connection between engagement and achievement has been noted in a variety of studies, whether or not the researcher has labeled the variable achievement. In engagement studies one will find various aspects of achievement such as participation in the classroom, number of assignments turned in, completion rate of homework, and more. These factors, as one can see, will directly influence the students' achievement scores. If a student is participating, then he or she is actively listening and is likely learning. In order to actively participate, a student must attend class, likewise, in order to achieve, a student must turn in assignments on a regular basis.

Research pertaining to the relationship between academic engagement and academic achievement is scarce; however, the existing studies have shown a positive correlation between school engagement and achievement (Marks, 2000). Students that are engaged are not only more likely to pursue higher education upon graduation; they are more likely to learn, to graduate from high school and college, and to find educational experiences rewarding (Marks). This connection should be similar when studying engagement in the Upward Bound program and achievement for two reasons. First, the Upward Bound program promotes engagement within the program itself and within the students' school environments. Second, the UB program provides engaging activities aimed at directly improving achievement levels of its participants. The UB program encourages students to become active in their school environment. By encouraging

relationships with counselors and teachers, providing direct assistance with school related activities, and encouraging achievement, UB students are actively persuaded to be engaged in their school environments. The students are also involved in activities outside of the school that promote academic achievement. From cultural field trips to supplemental instruction, UB students are offered a variety of engaging activities that promote academic achievement.

Finn and Voelkl (1993) found that students who were not engaged were not able to achieve because they did not gain the information needed for academic success. This is similar inside and outside of the school environment; whether the topic is atom splitting or financial aid planning, if a student is not engaged, he or she is unlikely to obtain any information from the activity. Therefore, just as a student who is disengaged from his or her school environment is unlikely to achieve, a student who is disengaged from the Upward Bound program is unlikely to reap the benefits that often lead to higher academic achievement, increased financial aid, and college enrollment. Thus, engagement is extremely important to the UB program. Finding out which at-risk groups are most engaged is exceptionally important for future development. Obtaining valuable information for designing activities that are engaging and promote academic achievement, whether the activities need to be more culturally diverse or more gender oriented, was one of the major goals of the present study.

## Summary

This chapter described research related to each of the variables of interest. The concept or theory known as opportunity to learn was introduced. A student's right to opportunities in education is important when reviewing the significance of programs such as Upward Bound. A discussion of the research related to Upward Bound attempted to define UB and its goals. Research relating to the success of the program was also introduced. Research on academic achievement has consistently found that low income and first generation students, in addition to ethnic minorities, are achieving at lower levels then the general population. After describing academic achievement, academic engagement was defined and described. Academic engagement can be measured in a variety of ways including the student's willingness to participate. Finally, academic achievement in relation to engagement was introduced. In the UB programs effort to improve achievement levels activities are implemented that are designed to engage students. Therefore, engagement in UB activities are thought to increase achievement levels of participants. In order to answer the research questions posed in Chapter I, the next chapter outlines the study, including the procedures and methods.

# CHAPTER III

# METHOD

The purpose of this study was to investigate the influence of certain demographic variables of Upward Bound (UB) students on their engagement and achievement levels. In this chapter the Upward Bound program is described in detail to accurately portray the demographic characteristics of its participants as well as introduce the sample that was used from the UB population. The measurement of the variables is described followed by a discussion of the procedure, including how the information was gathered, analyzed, and interpreted.

## Population/Sample

The sampling population for this study included all Upward Bound participants that entered the program between January 2000 and January 2006. In order to qualify for participation in the UB program, a student must be between the ages of 13 and 19, must have completed at least the eighth grade, and must be first generation or low income. The qualification status variables (first generation only, low income only or both first generation and low income) determine whether or not a student qualifies for the program. The Upward Bound program of interest is designed to include a minimum of 72

participants each year. However, the program has often maintained more than 72 students, and accepts new students each year due to student attrition and graduation. Each subject was counted by the year in which he or she entered the program called the cohort year. The following number of participants entered the UB program at Rogers State University (RSU) in the cohort years of 2000 thru 2005:

2000 – 22

2001 – 31

2002 – 32

2003 – 39

2004 – 57

2005 – 46

Thus, there were 227 potential subjects for the study. Although the information on record at RSU was used to obtain the data, the participants were not involved in the study physically or emotionally. No student or other individual was contacted for the purposes of this study. Accepting a subject was based on whether or not their file contained all of the information needed to complete the study. This needed information included grade point average (GPA) from the participants most recent year in high school, Test of Adults Basic Education (TABE) scores, and the students' gender, ethnicity, and qualification status (first generation and/or low income), as well as participation information (engagement). If for any reason a student file did not include all of the information required for the study, the subject was excluded. As the information was obtained it was entered anonymously onto an excel sheet, at which time the student's name was removed. The only time a student's name was used during data collection was when the

information was initially retrieved. During that time the names were used only momentarily to ensure that the all data corresponding to a specific individual was collected correctly. In order to protect the identity of the participants, the randomized list containing the names of the students' was destroyed once their files had been reviewed to obtain all of the information necessary for the study. The research gathering stage took approximately three days. During this time, the data sheets containing the students' names where stored in a locked, secure location at the Upward Bound Office.

Before the data collection began a proposal for research was submitted to the Oklahoma State University Institutional Review Board. The OSU Institutional Review Board approved the proposal application (Appendix C) for research involving RSU Upward Bound students, thus giving the researcher permission to begin gathering data. In addition to seeking IRB approval, permission was sought from the president of the university housing the Upward Bound Program of interest to use the university's name in the study (Appendix B).

## Research Instrument

Records Review Sheet I (Appendix A) reflects the demographic, achievement, and engagement information gathered from each participant in the study. The Test of Adults Basic Education (TABE) was the only instrument included in the data collection procedures. According to the McGraw-Hill Companies, the producers of the test, the TABE is a norm-referenced test used by numerous organizations, from employment agencies to academic enrichment programs, that measures test takers' abilities in reading,

language, mathematics, and spelling. The TABE is available in easy, medium, difficult, and advanced versions. The advanced version is recommended for grades eight and above; therefore, all Upward Bound students were given the advanced version of the test. All test givers must be certified by watching the appropriate video and sending in for national certification. All current Upward Bound staff members, including the researcher, have received certification to give and interpret the results of the TABE. Each of the other variables collected are described in more detail in the following sections.

### Gender and Ethnicity

The independent variables included students' gender, ethnicity, and qualification status. For the purposes of this study, the participants' ethnicities were categorized into four levels: Hispanic, Caucasian, African-American, or Native American. There were no incidences where an individual listed an ethnicity that was outside of these four categories. One should note that "Mexican" and "Puerto Rican" were both categorized as Hispanic Americans. In addition, Native American tribes, when listed, were not specified. For example, an individual who listed "Pawnee" as their ethnicity was included under Native American. On a few occasions, individuals listed two ethnicities, such as African American and Caucasian. In this case, the first level the individual listed was recorded as their ethnicity.

Qualification Status

On the application of each student, found in each student record, the individual's legal guardians are requested to answer a question pertaining to whether or not they have received, at minimum, a four year college degree. If the parents or guardians answered "yes," then it is recorded at the top of the application that the individual was not first generation. If the parent or guardian answered "no," then it is recorded that the individual was first generation. Although there is technically no way to ensure accuracy of this statement with the information available in the file, the guardians are required to sign the document indicating its truthfulness. The student's income levels found in their individual UB records are obtained from their guardian's tax documents from the year in which the student began participation in the program. The gross income and the number of dependents are used to determine whether or not a family qualifies as low-income. This information is compared to an income chart provided to the program by the federal government. Then, in the top right-hand corner of the document the staff member who prepared the student's file noted whether or not the individual met the requirements to be considered low income. This was recorded on the Records Review Sheet. The qualification status of the subject was recorded as one of three levels:  low income only, first generation only, or low both low income and first generation.

## Achievement Level

The subjects' achievement levels were measured as a product of their cumulative grade point average (GPA) and the most recent score obtained on the Test of Adults Basic Education (TABE). The RSU Upward Bound program requests student transcripts approximately twice per year. These transcripts provide the program with information regarding students' GPA, standardized test scores, and other academic information. All of the schools involved in the Upward Bound program of interest used a 4.0 scale to measure student performance. Thus, students' GPA ranged from 0.0 to 4.0., thus GPA scores were obtained based on a number value that corresponds to each letter grade. In the calculation of GPA, an A is worth four points, a B is worth three points, a C is worth two points, a D is worth one point, and an F is worth zero points because the individual will not pass the class with an F. For each class the number corresponding to the letter grade was recorded and then divided by the number of classes. For the purposes of this study the student's most recent, cumulative grade point average was recorded. A cumulative GPA records the average of the student's semester averages.

Students in the Upward Bound program are given the TABE test at the beginning and the end of each school year. In order to accurately represent students' current achievement levels, the most recent TABE scores were recorded. The TABE scores are presented in several ways including grade relevant scores for each test, an overall percentage mastered score, and an overall score. The percentage mastered was used in the achievement measure. The student could score between a 0 and a 100%. For calculation purposes, the TABE score was multiplied by .01 to convert the percent to a decimal.

Once each student's GPA and TABE scores were collected, their achievement scores were calculated. In order to calculate the achievement score, the participants' GPA's were multiplied by their TABE scores. By multiplying the two measures GPA and TABE were given equal value in the measure. That is, student GPA scores were mathematically and practically just as important as their scores on the TABE and vice versa.

## Engagement Level

Student engagement was measured as a combination of the student's engagement in the academic year and summer component for each year in which the student was involved in the program. In order to determine a student's engagement score for the academic year, the individuals start date and end date was collected. Start date refers to the month in which the student began participating in the RSU UB program, while end date refers to the month the student ended his or her participation. Once the number of months in which a student participated was determined using the start and end dates, the number of activities the student could have participated in were figured. The academic year lasts approximately 10 months (August through May) in which the students are required to participate in three activities monthly, thereby yielding a possible participation score of 30 for the academic year. The actual participation score of each subject for the academic component was gathered by reviewing the student's file and other pertinent documents to determine whether or not the individual attended each of the possible activities.

Once the possible and actual participation scores were gathered for the academic year, the same information was collected for the summer component. The summer component only lasts two months (June & July). Therefore, when attempting to establish a possible participation score, it was determined that the student's scores in summer classes would be used. During the summer grades are given; however, unlike traditional grades summer grades are based on important aspects of engagement such as the student's attendance, assignment completion, and behavior. Subsequently, for the purposes of this study, the student's grade in each class was referred to as his or her engagement score for that class. A student's engagement score in each class could be one of five levels: A, B, C, D, or F. Each level was assigned a descending value. That is, since an engagement score of A indicated excellent engagement, it was assigned a value of 10, whereas a C, which indicated an engagement score of meritocracy, was assigned a value of six.

The possible participation score for the summer was obtained by adding the number corresponding to each engagement score given to the student in each class. Most students take six classes, thus, for most students the possible participation score for the summer was 60; indicating that they took six courses and scored a perfect engagement score (an A) in each one. However, for various reasons, some students will have more or less courses, which will be reflected in their possible participation score. For students who were taking classes for college credit, they may have had only two or three classes. Any class for college credit was counted double in participation because it requires a higher level of engagement to complete when one considers that the classes for college credit are twice as long, have at least twice as much work, and are more difficult.

However, because a percent is calculated, the number of activities possible would not affect the student's abilities to obtain the same score. The actual participation score of each student was obtained by taking their final engagement score (A, B, C…) in each class and adding their corresponding values. Finally, to obtain the final engagement score for each student, the student's actual participation in the summer was added to his or her actual participation in the academic year, and this was divided by the sum of the student's possible participation score for the summer and academic components.

## Data Analysis

In order to respond to the research questions, a correlation was conducted to determine the relationship between engagement and achievement levels. In addition, two analyses of variance were conducted to determine the influence of the demographic variables on achievement and engagement. An analysis of variance allows the researcher to determine whether a difference exists between two or more populations or data sets (Bass, 2003). All of the statistical tests were conducted in an attempt to answer the following research questions:

4. Is there a statically significant relationship between academic achievement and engagement in UB?
5. In what ways do ethnicity, gender, and qualification status effect achievement levels participants?
6. In what ways do ethnicity, gender, and qualification status effect engagement levels of UB participants?

Appropriate post hoc tests were conducted to determine the main effects for gender, ethnicity and qualification status.

## Summary

This chapter described the demographic characteristics of the UB population, discussed the population under study, outlined the measurement of the variables, and presented the procedures such as how the information was gathered, analyzed and interpreted.

# CHAPTER IV

# RESULTS

The purpose of this study was to investigate the influence of ethnicity, gender, and qualification status of UB students on their engagement and achievement levels. This chapter presents the statistical results obtained from the research conducted in an effort to answer the research questions related to the engagement and achievement of UB students. The chapter begins by describing the demographic information related to the study and concludes with the results of the data.

## Descriptive Statistics

Ethnicity, Gender, Qualification Status, GPA, TABE scores, entry date, termination or graduation date, and participation level were collected for each subject (N=227). The TABE has only been used consistently in the Upward Bound program at Rogers State University (RSU) since 2000; therefore, data was collected on all students that entered the program from January of 2000 through those that entered by the end of 2005. Of the 227 possible participants for the study, 203 or 89% qualified for the study with complete data records. Of the sample, the Ethnicity levels of the group included 86 (42.4%) African Americans, 24 (11.8%) Native Americans, 77 (37.9 %) Caucasians and

16 (7.9%) Hispanics (see Table one). Out of the 203 participants in the study, only 65 or 32% qualified outside of the both low income and first generation level. Of those, 47 or 75% were first generation only. Therefore, out of the 203 participants, only 18 (8.9%) qualified as low income only. Of the 203 subjects, 144 (71%) were females and 59 (29%) were males. Examination of the collected data revealed that some levels of the qualification status variable were under-represented. As a result, qualification status was not used in the analysis of variance as it had the potential to compromise the results of the study.

Table 1
Frequency Distribution of Gender, Ethnicity & Qualification Status

| Ethnicity | 1st Generation Only | Female Low Income Only | Both Low Income & 1st Generation | 1st Generation Only | Male Low Income Only | Both Low Income & 1st Generation |
|---|---|---|---|---|---|---|
| Hispanic American | 3 | 1 | 8 | 12 | 2 | 1 |
| Caucasian American | 15 | 1 | 37 | 4 | 1 | 19 |
| African American | 5 | 7 | 47 | 6 | 3 | 18 |
| Native American | 1 | 2 | 17 | 1 | 1 | 2 |

A review of the frequency distribution revealed low cell numbers. These low cell numbers were due to an under-representation of Native American males and Hispanic American males in the collected data. The low participant numbers for those cells suggested that the analysis would be adversely affected. Therefore, t-tests were run to determine whether the two groups containing the low cell numbers (Native Americans and Hispanics) could possibly be collapsed into a single group. The t-tests revealed no

significant differences between the two groups for Engagement ($t$ = -1.411, $df$ = 38, *ns*), Achievement ($t$ = .145, $df$ = 38, *ns*), GPA ($t$ = .030, $df$ = 38, *ns*), or TABE scores ($t$ = .735, $df$ = 38, *ns*). Because no significant differences were found, the t-tests indicated that the two groups could be collapsed into one. Thus, the problem of certain cells containing relatively small numbers of participants was reduced by combining the participants whose ethnicity was "Native American" with those participants whose ethnicity was "Hispanic." Table two shows the difference in the distribution for gender and ethnicity after the levels were collapsed.

Table 2
Frequency Distribution of Gender and Ethnicity

| Ethnicity | Male | Female |
|---|---|---|
| Hispanic American | 8 | 32 |
| Caucasian American | 24 | 53 |
| African American | 27 | 59 |

## Research Questions

### Achievement and Engagement

7. *Is there a statically significant relationship between academic achievement and engagement in UB?*

Achievement was measured as dual variable consisting of the product of GPA and TABE. By using the product of the two variables, GPA and TABE were given the same value in terms of their contribution to the students' overall achievement levels.

A significant correlation between Engagement and Achievement was found ($r = .131$, $p < .05$). The direction of the correlation was positive, indicating that as students' Engagement in UB increases so does their Achievement.

### Achievement, Ethnicity, and Gender

*2. In what ways do ethnicity and gender affect achievement levels of participants?*

In order to answer the research questions pertaining to the relationship between Achievement and the students' Ethnicity and Gender, a univariate analysis of variance was completed. However, in order to complete an ANOVA, certain assumptions must be met. Before conducting an ANOVA, Levene's Test of Equality of Variances was run to test the null hypothesis that the error variance of the dependent variable was equal across groups. Table three shows the results of Levene's Test. Levene's test revealed that the error variance of the dependent variable was not equal across groups, thereby failing to meet the assumption. However, the ANOVA design is robust for minor violations from

the homogeneity of variance assumption, thereby allowing the research to be conducted even though the data failed to meet this assumption.

Table 3
Lavene's Test of Equality of Error Variance
Dependent Variable Achievement Score

| F | df1 | df2 | Significance |
|---|---|---|---|
| .814 | 5 | 197 | .541 |

Once Levene's test was complete, a between-subject analysis of variance (ANOVA) was performed in order examine the relationships between Achievement and Gender, Achievement and Ethnicity, and Achievement and Gender and Ethnicity. The results of the corrected model revealed a significant result (F (5, 197) = 2.711, $p$ = .022), indicating the possibility of a significant relationship between Achievement and Ethnicity, Achievement and Gender, or Achievement and Gender and Ethnicity. Further analysis revealed no significant differences in Achievement scores for Ethnicity and Gender ($F$ (2, 197) = .841, *ns*). Likewise, no significant differences were found in Achievement scores for Gender ($F$ (1, 107)) = 2.662, *ns*). A significant difference was found in Achievement scores for Ethnicity ($F$ (2, 197) = 4.173, $p$ = .017). The results for the tests of between-subjects effects are listed in Table four below.

Table 4
Tests of Between Subject Effects (DV: Achievement, IV: Ethnicity & Gender)

| Source | Type III SS | df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Corrected Model | 4.695 | 5 | .938 | 2.711 | .022 |
| Ethnicity | 2.889 | 2 | 1.445 | 4.173 | .017 |
| Gender | .922 | 1 | .922 | 2.662 | .104 |
| Ethnicity and Gender | .582 | 2 | .291 | .841 | .433 |
| Error | 68.196 | 197 | .346 | | |
| Total | 72.889 | 203 | | | |

Although the ANOVA revealed significant differences in Achievement scores for Ethnicity, it did not reveal between what levels these differences existed. Therefore, post hoc tests had to be conducted to determine between which groups the differences were found. Due to the fact that the data failed to meet the assumption of homogeneity, the Dunnett T3 was used for the post hoc examination. The post hoc examination revealed that there were significant differences in the Achievement scores of African Americans in comparison to Native American/Hispanic Americans, as well as differences in the scores of African Americans in comparison to Caucasians. The post hoc test revealed that the Native/Hispanic American group and the Caucasian American group both scored higher on the Achievement measure then the African American group. Table five reveals the results of the post hoc examination.

Table 5
Dunnett T3, Post Hoc Examination of Achievement and Ethnicity

| (i) Ethnicity | (j) Ethnicity | Mean Difference (i-j) | Std Error | Sig. |
|---|---|---|---|---|
| African American | Native/Hispanic | -.296109* | .1191972 | .046 |
| | Caucasian | -.238289* | .0902552 | .027 |
| Native/Hispanic | African American | .296109 | .1191972 | .046 |
| | Caucasian | .057820 | .1256437 | .955 |
| Caucasian | African American | .238289* | .0902552 | .027 |
| | Native/Hispanic | -.057820 | .1256437 | .955 |

*The mean difference is significant at the .05 level

Engagement, Ethnicity, and Gender

8. *In what ways do Ethnicity and Gender affect the Engagement levels of participants?*

In order to answer the research question a univariate analysis of variance had to be completed. And yet, in order to complete an ANOVA, certain assumptions had to be met. Before conducting the ANOVA, Levene's Test of Equality of Variances was run to test the null hypothesis that the error variance of the dependent variable was equal across groups. Table six shows the results of Levene's Test which indicated that the error variance of the dependent variable was equal across groups, thereby satisfying the assumption and allowing the ANOVA to be conducted.

Table 6
Levene's Test of Equality of Error Variance; Dependent Variable: Engagement Score

| F | df1 | df2 | Significance |
|---|---|---|---|
| .814 | 5 | 197 | .018 |

A between-subject analysis of variance (ANOVA) was performed on Engagement in order examine the relationships between Engagement and Gender and Ethnicity, the relationship between Engagement and Gender, and the relationship between Engagement and Ethnicity. The analysis revealed no significant results (F = .649, ns). Because the corrected model showed no significance, one can automatically assume that no significant differences existed between Engagement and Ethnicity, Engagement and Gender, and that there were no significant differences in Engagement for Gender and Ethnicity.

## Summary

A review of the frequency distribution revealed several cells with low participant numbers. Further review showed that the two cells were Native American males and Hispanic males. In order to avoid removing entire levels from the Ethnicity variable, t-tests were conducted to determine whether the two levels could be collapsed into one. The t-tests revealed no significant differences between the two ethnicities, and thus they were combined into one.

A correlation was conducted to determine the relationship between engagement and achievement. A correlation was found indicating a positive relationship between

engagement in UB and achievement. Analyses of variance (ANOVA) statistical designs were conducted to determine whether relationships existed between Achievement and Ethnicity, Achievement and Gender, and/or Achievement and Ethnicity and Gender. Significant results were found between Achievement and Ethnicity. An examination of the data using the Dunnett T3 post hoc test revealed significant differences between the achievement scores of African Americans and Native/Hispanic Americans and between African Americans and Caucasians. In both instances, African Americans scored lower then the other ethnic group. Finally, an ANOVA design was used to determine whether relationships existed between Engagement scores and Ethnicity, Engagement and Gender, and/or Engagement and Ethnicity and Gender. No significant results were found. The implications of the research findings of all of the analyses listed above are discussed further in the next chapter.

# CHAPTER V

# CONCLUSIONS AND RECOMMENDATIONS

The final chapter of this study summarizes and analyzes the investigation and its implications for further research and practice. After a summary of the study is presented, the conclusions are introduced. Next, implications for future research are described in terms of what is important for researchers interested in this area. In addition to the implications for research, implications for the Upward Bound program are presented.

## Summary of the Study

During the preliminary analysis it was determined that low cell numbers related to the qualification status variable could potentially affect the results of the study. Thus, the current study was unable to analyze qualification status due to low numbers of first generation only and/or low income only students. In addition, low cell numbers required the combination of two levels of the ethnicity variable: Native Americans and Hispanic Americans. The first research question dealt with the correlation between engagement and achievement levels. A significant correlation was found between engagement and achievement. The research questions pertaining to the relationship between achievement and ethnicity, achievement and gender, and achievement and ethnicity and gender

revealed significant results. The research suggested that a significant relationship existed between achievement and ethnicity. Post hoc tests revealed that there were significant differences in the achievement scores of Native/Hispanic Americans and African Americans and between Caucasians and African Americans. In both cases African Americans scored lower. Finally, an examination of engagement and gender, engagement and ethnicity, and engagement and gender and ethnicity was conducted. ANOVA examination revealed no significant results.

## Conclusions

The inability to use qualification status as a variable in the study was most likely related to the Upward Bound requirement that states all UB programs must maintain a population in which two-thirds of all the participants are both first generation and low income. With a sample size of 203 participants spread across three variables and seven levels, it was difficult to obtain large enough cell numbers to conduct a viable study. This is particularly true because the groups were pre-destined, that is, the individuals could not be assigned to particular groups.

The combination of Native Americans and Hispanic Americans into one ethnic level was not only the result of a low sample size, but likely the result of an over-saturation of females within the UB program generally, and within the sample population specifically. In general, the UB population was over 70% female. This inequality in males and females was particularly evident in Native Americans and Hispanic Americans, as both groups only contained four males. Due to the low sample size and

high saturation of females, the two levels did not produce enough participants individually to be studied independently.

A correlation was found between engagement and achievement, indicating that as engagement in UB increases achievement also increases, and vice versa. The existence of a correlation helps to justify the suggestion that UB program activities aimed at engaging students in an effort to improve their achievement levels are effective. That is, the more engaged a student is in Upward Bound, the more he or she is achieving. However, only a small correlation was found between engagement and achievement. That is, the strength of the relationship would be considered weak. Several suggestions could be made as to why this relationship would be weak. First, one must evaluate the variables used to measure achievement and engagement. Neither measure has been used on this population in the past. Therefore, the reliability and validity of these measures have to be considered. If the achievement measure was only measuring a percent of the achievement experienced by Upward Bound students, then its relationship to engagement could be jeopardized. There are no studies to prove the reliability of an engagement measured based solely on the students' percent of participation in the three main activities during the school year in combination with their summer component engagement. Because students can and often do access services outside of the three main activities each month, this could realistically affect their level of engagement in the program, particularly in relation to their achievement levels. Another suggestion would be that engagement in UB only contributes slightly to the students' achievement levels. In this case, one may wish to consider the activities used by the particular program in their efforts to improve achievement.

Post hoc examinations revealed significant differences between the achievement scores of African Americans and Native/Hispanic Americans and between African Americans and Caucasians. African Americans scored lower on achievement than Caucasians and Native/Hispanic Americans in this population. Some researchers have claimed a majority bias on standardized tests, suggesting that they are easier for the predominate culture in a given area, which in this case would be Caucasians. Steele (2004) states that too many assumptions are made in relation to standardized testing. Steele believes that early in life standardized tests label African Americans negatively and thereby contributes to the perpetuation of low achievement scores throughout their lives. Steele labels the difference in scores between African Americans and the majority culture the "race gap," and suggests its very existence perpetuates its continuance.

The UB program of interest serves three counties: Mayes, Rogers, and Tulsa. In the three counties, the total population of African Americans is only 9.1% of the entire population, according to statistics provided by the US Census Bureau in 2006. Within the UB population over the last five years, African Americans made up 41.4% of the population. Because the Upward Bound population has an over-representation of African Americans when compared to the general population of the area served, there is a potential that the African Americans tested represented a larger spread of achievement scores than the other three ethnicities. That is, because the African American population in the program is much larger then their representation in the general population, there is greater chance that a wider representation of achievement scores affected their overall achievement in the program. However, an over-saturation of African Americans in the

population is certainly not a guarantee as to why they seem to be scoring lower on achievement then other ethnicities.

## Suggestions for Future Research

Numerous studies have related first generation and low income students to lowered achievement. In addition, studies have shown a correlation between ethnic minorities and first generation status, as well as between ethnic minorities and low income status. Research on the achievement levels of first generation and low income students is important for future revelations on improving the achievement levels of some of the nation's most at-risk students. An unfortunate side-effect of requiring that two-thirds of all participants in the UB program be first generation or low income is that the sample did not offer enough variability for a viable study. Future studies should attempt to increase the sample size to study these important variables. In order to increase the sample size it may be necessary to include more than one Upward Bound program. Although this reduces the immediate applicability of the results to the RSU UB program, studies on similar programs could be generalizable to this population.

Understanding even small differences in the achievement and engagement rates of Native Americans and Hispanic Americans is important for achievement research. Particularly when one considers that the statistics suggest both Native Americans and Hispanic Americans are graduating at lower rates then the general population, understanding differences in achievement in these individual groups is extremely important for improving activities aimed at influencing their achievement levels. Future

analysis should attempt to provide larger sample sizes to reduce the probability that ethnic levels will have to be collapsed. Like the problem encountered with qualification status, the answer may lie in the need to expand future studies to include more than one program.

This study introduced two unique measures for achievement and engagement. First, achievement was measured as the product of the students' GPA and TABE scores. Because this measure had not been used in previous research, there was no way to predict the reliability of the measure. Future research should attempt to replicate the use of the achievement measure to help determine its reliability. Individually, both achievement tests and GPA have been used consistently as achievement measures. However, research has not attempted to provide analyses on how well these measures indicate the achievement of populations such as those in the Upward Bound program, when used independently. Research suggests that both GPA and achievement tests, as independent measures of achievement, have flaws that prevent them from providing accurate measures on all populations. With Upward Bound programs continually fighting for their substantiation in the current presidential administration, no time has the study of achievement of Upward Bound students been more important. If a dual measure, such as the one used in this analysis, provides a better measure of overall achievement then measures that have been used in the past, it could eventually be standardized to all UB programs.

Achievement tests have been used consistently as measures of achievement; however, the TABE, which is offered to RSU Upward Bound students, has not been used in previous research. Future studies should replicate the use of TABE as an achievement

measure, particularly with larger populations Yet, because the TABE is limited to a few subject areas, it may be more realistic to use this test in combination with other achievement measures such as GPA, to gain a more accurate picture of the students overall achievement levels. Additionally, achievement tests that focus on a broader range of subjects, given to the UB population, could be useful in future analyses.

Like the achievement measure, the engagement measure used in this study was unique. The engagement measure in this study looked at the students' engagement as a percent of activities participated in divided by the percent of activities offered. Research on other engagement measures used by UB programs should be conducted to determine the most efficient measure of engagement. In addition, future studies may consider other possible measures of engagement, such as the inclusion of all activities initiated and participated in by the student such as; tutoring, academic counseling, personal counseling, etc. All of these activities could be predictors of engagement.

The first research question posed whether a relationship exists between engagement in Upward Bound and student achievement. A weak, positive correlation suggests that engagement in the program does improve achievement; unfortunately, the correlation only suggests a weak relationship. It is extremely important for the future of achievement programs and the achievement of at-risk students in general to understand the relationship between engagement in the activities proposed to improve achievement and students' actual achievement. Replication studies on larger populations of UB students will hopefully provide a more accurate measure of the relationship between engagement and achievement. In addition, understanding the affect that individual activities offered by the program have on achievement could lead the way for program

improvement, one activity at a time. As suggested with most of the results, a larger sample size would likely provide a more accurate measure of the correlation between UB engagement and achievement levels.

The only result that proved significant was the relationship between achievement and ethnicity. That is, the only significant differences found in the ANOVA tests included the test of between-subject effects of achievement and ethnicity. Post hoc tests revealed that African Americans were scoring lower on achievement then the other ethnicities in this population. Although research has been done on standardized tests in general, it may be necessary to test the potential bias of the TABE test, in terms of its bias towards the majority culture. Although the bias in standardized tests may account for the differences in the scores of African Americans in comparison to Caucasians, it really does little to explain why a group made up of two other predominately minority cultures, Native Americans and Hispanics, would score better. Whether the differences occur due to selective population samples, or biases in the TABE, more research in this area is certainly important. Regardless of the reasons for the results found in this study, the low scores of African Americans on the achievement measure suggests the need for further research into the differences in achievement levels of the various ethnicities within the UB program.

Finally, understanding the relationship between engagement of individual ethnicities and genders is extremely important for creating activities that are engaging and that lead to overall improvements in achievement. The study found no significant results for engagement. The current study may have been unable to detect differences in the engagement scores of these particular groups due to a lack of power due to the low

sample size. Regardless, future studies should continue to explore the relationship between ethnicity and engagement and gender and engagement. In order to create achievement programs that are helpful to all populations, we must first understand how well certain activities engage these individuals. Creating a well-balanced achievement program will be based on future research in this area.

## Implications for Upward Bound

The results of this study offer some insight into possible suggestions for the RSU Upward Bound program. First, the fact that Native Americans and Hispanic Americans had to be combined into a single group caused concern. The revelation that over a five-year period only four Native American males and four Hispanic American males ever participated in the program caused immediate concern. Although this may cause one to assume that Hispanic Americans, and possibly Native Americans are under-represented in the UB population, research revealed something different. According to the U.S. Census Bureau (2006), Native Americans and Hispanic Americans combined make up 11.8 % of the population in Tulsa, Mayes, and Rogers Counties. This is comparable to the 19.4% of the Upward Bound population made up of Native Americans and Hispanics.

After revealing that the Native American and Hispanic American population in the program was comparable with the population from which the program is pooled, attention turned to the other part of the equation: gender. As noted, there were only four Native American and four Hispanic American males over a five-year period. Further analysis revealed that over 70% of the UB population during this time period was female! In Rogers, Mayes, and Tulsa counties, approximately 50% of the population is male (U.S.

Census Bureau, 2006). A quick review of the current UB population participating in the summer component of 2006 revealed a continued domination of females: the population included 13 males and 37 females! Therefore, the question that needs to be addressed is why is UB accepting so few males?

The Upward Bound program is designed to help the most at-risk students in a given area to succeed. Thus, equality in terms of equal representation of the population is important for continued success. The possibilities for why so few males are entering in the UB program are numerous, but must be considered in an effort to reconcile this problem. First, the UB staff is 100% female, and the staff has maintained this proportion for at least 10 years. There is the possibility that females are more inclined to choose females, or, that male students are less likely to enroll when interviewed or approached by a female. Research on the attitudes of the current staff members, or females in general, towards student selection may be appropriate in determining whether the full female staff influences the number of males accepted into the program.

Another potential dissuader of boys entering the program is the recruitment process. Although the recruitment process changes subtly from year to year, the current procedure includes the female counselor visiting student classes to give a presentation on the UB program. Next, all those students that are interested are required to turn in a short interest form that includes their name, phone number, address, GPA, and other academic history. Then, interviews are set with each of the students. Students are chosen during a very subjective process of elimination, and are then required to complete a lengthy application with their parents. Currently, the recruitment process includes a video as a visual aid. The video includes numerous shots of the students participating in summer

activities, including attending classes, skating, and hanging out with friends. This video was created by students and a female broadcasting instructor at Rogers State University. However, no research was conducted to determine what types of activities would attract males into the program. The possibility exists that some of the activities shown on the video are extremely "feminine," suggesting a bias towards the recruitment of females. For example, the video shows group dances and skating, which may influence the males decision that the program is for females. An evaluation of teenage male preferences in relation to what is shown on the video may be helpful in creating a recruitment video that interests both males and females.

In addition to the video shown during recruitment, the general recruitment presentation may be biased towards females. Although the presentation is highly dependent on the counselor who is presenting the material, a clear understanding of what types of activities would peak the interests of male students could increase the numbers in which they sign up for the interview. Finally, during the recruitment presentation it is announced that the student must be first generation and/or low income. Male students may feel more inclined to resist suggesting that they are low income by signing up for the program in front of their peers.

Although it was determined that Native Americans and Hispanic Americans, in general, are being fairly represented within the population, Caucasians and African Americans are not represented equally in comparison to the general population. In Rogers, Mayes, and Tulsa counties, African Americans make up approximately 9.1% of the population. However, in Upward Bound, African Americans make up almost 42% of the population. This over-saturation of African Americans may be contributed to

something as simple as selection bias during the ambiguous selection process. That is, when new employees are trained for the UB program, they are asked to read and become familiar with the UB grant. The grant states that the program should address barriers to equal access into the program through "…identification and recruitment efforts [that] are targeted across multi-cultural and minority concentrated target schools in dispersed segments of the target area to ensure equitable exposure to the opportunity presented by the program" (p. 35). The grant goes on to suggest that individuals that are under-served should be given priority in order to ensure a broad ethnic representation within the program. Unfortunately, this "suggestion" could be leading staff to choosing African Americans due to the subjective mind-set that they are more under-served than their Caucasian counterparts. Likewise, a fear of being labeled racist or even the suggestion that they are culturally insensitive may lead them to choose more African Americans in the recruitment procedures. One support for this suggestion is the fact that Caucasians are severely under-presented in the UB population. That is, in the UB population Caucasians make up 39.2% of the population under study, however, in the service area Caucasians make up almost 74% of the population!

The lack of males, over-saturation of African Americans, and even the under-representation of Caucasians could all be the direct result of the ambiguous selection process used by the RSU Upward Bound program for student acceptance. Although there are no requirements for the initial recruitment procedures, students are quickly reduced by subjective scores given to them by the UB counselors. According to the grant, students should be screened for their "…academic, economic, family, and social history" (p. 37). The grant goes on to say that the students should be ranked according to their academic

need and potential. However, no guidelines are given to suggest what academic, economic, family, or social factors should be obtained. Likewise, no system for ranking the students is offered. Ultimately, the process is completely subjective and dependent on the three UB staff members for final acceptance.

The broad guidelines given for student screening should be combined into an organized, systematic approach to student acceptance. With a more organized approach to student acceptance, the program could even ensure it was accepting populations in closer proportions to the population under study. Numerous factors would need to be considered when creating an evaluation method for student acceptance. However, if the program created a needs assessment that assigned values to areas that suggested the student was in the most need, the program could become much more efficient in helping the areas most at-risk students. For example, we know that being a ethnic minority, whether one is African American, Hispanic, or Asian, is a contributor to lowered achievement; therefore, being an ethnic minority may be weighted somewhat heavier than being in the majority population within a given area. Likewise, research suggests that being low income or first generation contributes to lowered achievement, and thus, one can assume that being both would contribute more than either individually; thus, an individual that is both low income and first generation would be given more weight in that area than others. Other factors that could be weighted include test scores, social skills, and even current GPA. It may be worthwhile to develop a short assessment to determine the extent to which a student is at-risk for lowered academic performance. Until then, students will continue to be selected arbitrarily, and will likely continue to be

under-represented, over-represented, or not represented at all, such is the case with the small but present Asian population in the area.

Most of the objectives of the RSU Upward Bound program revolve around increasing the achievement levels of participants. For example, objective two of the grant guiding the RSU Upward Bound program states, “A minimum of eighty percent (80%) of participants, assessed below grade level in one or more core subject areas, will exhibit … measures of improvement annually until grade level equivalently skills are achieved or participant attains a minimum 2.5 GPA on a 4.0 scale” (p. 12). The other objectives include the desire to keep the students in the program throughout their high school career, help prepare them for successful post-secondary enrollment and graduation, and contribute to their education in computer technology. Therefore, increasing achievement is an underlying goal of all activities employed by the Upward Bound program. The program introduces three specific activities monthly during the academic year aimed at improving achievement: Saturday Meetings, Tuesday Meetings, and Academic Progress Report Reviews. Each of these activities aims at engaging the students in an effort to improve achievement. The study found only a weak correlation between engagement in UB and achievement; however, the relationship exists, and is foundational to meeting the objectives set forth by the UB program.

Now that a relationship between general engagement in UB and achievement has been established, it is imperative to determine which activities are most engaging, and how well specific activities influence achievement levels. The current strategy used during Tuesday Meetings is to encourage students to bring their own homework, assign them to an instructor with experience in that subject, and expect them to request help

when needed. Recently, enrichment worksheets in the various areas have been obtained to encourage students to continue enrichment once assigned work is completed. No measures are currently employed to determine whether the student is actually improving his or her grades or level of knowledge in the subject area(s) studied. There are several possibilities for testing the effectiveness of the current meetings, and ensuring that the meetings are as efficient as possible. First, many students show up with no work claiming that they have no homework. Therefore, little achievement is accomplished. However, simply keeping the students latest progress report on hand could help to suggest what area that student is struggling the most. The biggest problem with introducing various topics within a subject is that the topics may or may not be related to class work. One of the problems experienced by Upward Bound in their attempts to enrich students academically is the lack of access to the educational materials used at the schools served. If a relationship could be established with the various institutions from which the students are drawn that would allow for access to academic requirements, the program could be much more efficient in preparing and ultimately helping students. For example, in September after student recruitment is complete, a spreadsheet could be made for each school in which each Upward Bound student's classes and teachers are listed. Once a list has been obtained, a general letter could be sent to all instructors with a list of the students involved in the program, as well as a request for all syllabi, assignments, etc. Most educators would be more than willing to help improve student's achievement in any way. Once this information is obtained, a file could be made for each school in which a teacher's syllabi could be pulled up quickly, making supplemental instruction, tutoring, and ultimately increasing achievement much easier.

Regardless of changes to the curriculum for Tuesday meetings, it is important to determine whether current efforts are engaging students, and ultimately improving achievement levels. A general survey of student engagement could be helpful in determining how well the students are responding to the services offered during Tuesday Night Meetings. Because these meetings deal with the students' school achievement especially, grades and GPA are probably the best indicators of whether this particular activity is influencing achievement. And yet, understanding whether the activity is engaging is paramount to determining its influence on achievement. Csikszentmihalyi et al, (2003) suggest that flow theory helps to clarify student engagement. By evaluating flow theory in terms of student engagement, one can suggest that interest, concentration and enjoyment of the activity should occur simultaneously in order for the student to experience a sense of pleasure in the activity and for them to perceive it as worthwhile. Based on this suggestion, the Experience Sampling Method (ESM) can be used to effectively measure student engagement. The ESM method evaluates individual's affective and cognitive experiences and the activity and location during random times of involvement in the activity. The ESM could offer valuable information about student engagement in Tuesday Night Activities including information on attention, quality of experience, challenge, instructional relevance, and control. Understanding the engagement levels of these students, particularly before and after the implementation of new strategies, will be important in developing the most effective strategies possible.

Unlike Tuesday meetings which focus specifically on the school achievement of students, Saturday meetings are much broader. These meetings focus on the academic, social, and cultural achievement of UB students. Encouraging students to attend a

meeting on a Saturday is extremely important for the success of the program. If students are unwilling to attend this meeting, they miss out on a large part of the program. Therefore, these activities must be extremely engaging, and yet, they must offer the students the most effective access to information that can contribute to their overall achievement. Currently, the program chooses meetings based on what activities are available, funding, and attempts to introduce cultural, social, and academic elements. These meetings should be engaging to all genders, ethnicities, etc., in order to be successful. Currently, no evaluation measures are in place to determine whether or not the students were engaged in the meetings, enjoyed the meetings, or even improved their achievement. One possibility for focusing the achievement component of these activities is to create a pre and post test based on the information that should be retained during an activity. This pre/post measure could help the staff to not only determine whether the students achieved, but ultimately whether they were engaged enough in the activity to achieve. These evaluations could be paramount in determining the curriculum for the next academic year.

In addition to the Tuesday and Saturday meetings, each student is required to turn in a monthly progress report. Yet, for a variety of reasons, not all students turn these reports in. These reports could be used to effectively evaluate and help improve student achievement; however, the students must submit them. If a relationship is established with the teachers in each school it may be easier to obtain student grades. For example, instead of sending the progress reports with the students to each of their teachers, a progress report could be sent to each of the instructors with the students' names that are participating in the program on it, requesting their current grades. This would not only

ensure access to the students' grades, but keep the relationship between the program and the teachers' current.

The study found that African Americans are achieving at lower levels than other ethnicities within the population. The program should certainly invest time in discovering why this specific group appears to be lacking the benefits possible from this program. A quick review of the research data reveals an interesting phenomenon: African Americans have lower GPA's in general then the rest of the UB population. Of the African Americans in the sample population only 16.3% had a GPA of 3.0 or above. In comparison, 36.8% of all the other participants had a GPA of 3.0 or above. Therefore, in general, the African Americans are struggling with lower GPA's. An interesting question is whether the African American population has had substantial increases in their GPA since entering the program. The current study only includes the participants' most recent GPA. An evaluation of the increase, decrease, or stagnation of African American participants GPA will be important in determining how serious the problem of African American achievement is. In addition, studies on the engagement of African Americans in individual program activities can help determine whether the program is failing to offer engaging activities to this population.

The RSU UB program has the potential to positively influence the lives of hundreds of students each year. According to yearly reviews the program has had tremendous overall success. However, studying specific results within the program, such as its ability to influence Hispanic Americans, males, or low income students, is important in helping the program to expand its results to include all members of its

population. Review of the suggestions above could help the program to continue to excel in its quest to help low income, first generation students.

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# APPENDIX A

## RECORDS REVIEW SHEET 1

**Records Review Sheet**

| ID | Ethnicity | Gender | Qualification Status | GPA | TABE | Possible Academic Year | Possible Summer | Actual Academic | Actual Summer | Actual Overall | Possible Overall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 1 | 3 | 3.57 | 0.76 | 0 | 12 | 0 | 9 | 9 | 12 |
| 2 | 3 | 2 | 3 | 2.11 | 0.70 | 70 | 48 | 62 | 23 | 85 | 118 |
| 3 | 1 | 1 | 3 | 2.88 | 0.70 | 0 | 12 | 0 | 8 | 8 | 12 |
| 4 | 1 | 2 | 3 | 2.13 | 0.45 | 70 | 42 | 0 | 21 | 21 | 112 |
| 5 | 1 | 1 | 3 | 2.90 | 0.78 | 100 | 90 | 96 | 39 | 135 | 190 |
| 6 | 2 | 1 | 3 | 2.80 | 0.65 | 70 | 51 | 60 | 22 | 82 | 121 |
| 7 | 3 | 1 | 3 | 2.52 | 0.70 | 180 | 81 | 122 | 44 | 166 | 261 |
| 8 | 3 | 1 | 1 | 1.98 | 0.62 | 0 | 12 | 0 | 1 | 1 | 12 |
| 9 | 1 | 1 | 3 | 2.60 | 0.64 | 180 | 81 | 144 | 19 | 163 | 261 |
| 10 | 1 | 1 | 3 | 2.13 | 0.57 | 90 | 72 | 78 | 32 | 110 | 162 |
| 11 | 2 | 1 | 3 | 3.25 | 0.59 | 100 | 72 | 94 | 21 | 115 | 172 |
| 12 | 1 | 1 | 3 | 3.68 | 0.53 | 70 | 45 | 0 | 23 | 23 | 115 |
| 13 | 1 | 1 | 3 | 2.75 | 0.48 | 70 | 45 | 0 | 10 | 10 | 115 |
| 14 | 3 | 1 | 3 | 3.00 | 0.85 | 0 | 12 | 0 | 11 | 11 | 12 |
| 15 | 3 | 1 | 1 | 2.88 | 0.52 | 0 | 12 | 0 | 7 | 7 | 12 |
| 16 | 2 | 1 | 3 | 2.33 | 0.62 | 70 | 48 | 70 | 16 | 86 | 118 |
| 17 | 3 | 2 | 3 | 3.11 | 0.74 | 245 | 45 | 144 | 33 | 177 | 290 |
| 18 | 3 | 1 | 1 | 2.43 | 0.67 | 160 | 90 | 142 | 50 | 192 | 250 |
| 19 | 3 | 1 | 3 | 3.71 | 0.64 | 0 | 12 | 0 | 10 | 10 | 12 |
| 20 | 2 | 1 | 3 | 3.21 | 0.72 | 0 | 12 | 0 | 9 | 9 | 12 |
| 21 | 3 | 1 | 3 | 3.67 | 0.81 | 0 | 12 | 0 | 9 | 9 | 12 |
| 22 | 3 | 1 | 1 | 3.00 | 0.72 | 70 | 42 | 70 | 10 | 80 | 112 |
| 23 | 1 | 1 | 2 | 2.38 | 0.70 | 70 | 42 | 62 | 20 | 82 | 112 |
| 24 | 3 | 1 | 3 | 3.03 | 0.60 | 70 | 45 | 0 | 13 | 13 | 115 |
| 25 | 3 | 1 | 3 | 2.72 | 0.80 | 0 | 12 | 0 | 12 | 12 | 12 |
| 26 | 1 | 2 | 3 | 3.50 | 0.60 | 70 | 45 | 68 | 25 | 93 | 115 |
| 27 | 1 | 1 | 3 | 3.32 | 0.70 | 70 | 45 | 58 | 14 | 72 | 115 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 1 | 1 | 3 | 2.77 | 0.37 | 200 | 90 | 158 | 73 | 231 | 290 |
| 29 | 2 | 1 | 3 | 3.50 | 0.77 | 70 | 48 | 70 | 9 | 79 | 118 |
| 30 | 3 | 1 | 1 | 3.33 | 0.79 | 140 | 81 | 130 | 48 | 178 | 221 |
| 31 | 1 | 1 | 2 | 2.48 | 0.53 | 60 | 33 | 0 | 4 | 4 | 93 |
| 32 | 1 | 1 | 3 | 2.57 | 0.79 | 140 | 81 | 130 | 31 | 161 | 221 |
| 33 | 3 | 1 | 3 | 1.61 | 0.55 | 120 | 78 | 56 | 28 | 84 | 198 |

| ID | Ethnicity | Gender | QualificationStatus | GPA | TABE | PossibleAcademicYear | Possible Summer | Actual Academic | Actual Summer | Actual Overall | PossibleOverall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | 1 | 2 | 3 | 2.74 | 0.47 | 170 | 81 | 132 | 38 | 170 | 251 |
| 35 | 1 | 2 | 3 | 1.88 | 0.49 | 60 | 69 | 30 | 7 | 37 | 129 |
| 36 | 1 | 2 | 3 | 3.00 | 0.63 | 170 | 84 | 144 | 61 | 205 | 254 |
| 37 | 1 | 1 | 3 | 2.29 | 0.74 | 260 | 90 | 208 | 68 | 276 | 350 |
| 38 | 2 | 2 | 3 | 2.14 | 0.41 | 150 | 78 | 98 | 29 | 127 | 228 |
| 39 | 3 | 2 | 3 | 2.67 | 0.79 | 70 | 45 | 70 | 21 | 91 | 115 |
| 40 | 3 | 1 | 3 | 2.87 | 0.73 | 170 | 81 | 150 | 38 | 188 | 251 |
| 41 | 3 | 1 | 3 | 1.93 | 0.76 | 110 | 36 | 90 | 5 | 95 | 146 |
| 42 | 2 | 1 | 3 | 3.68 | 0.80 | 0 | 15 | 0 | 14 | 14 | 15 |
| 43 | 4 | 1 | 3 | 3.80 | 0.78 | 0 | 12 | 0 | 10 | 10 | 12 |
| 44 | 2 | 2 | 3 | 2.66 | 0.78 | 70 | 42 | 0 | 16 | 16 | 112 |
| 45 | 2 | 1 | 2 | 3.47 | 0.71 | 70 | 42 | 27 | 8 | 35 | 112 |
| 46 | 1 | 2 | 2 | 3.01 | 0.60 | 180 | 78 | 138 | 44 | 182 | 258 |
| 47 | 4 | 1 | 3 | 3.05 | 0.60 | 170 | 81 | 156 | 57 | 213 | 251 |
| 48 | 3 | 2 | 3 | 2.50 | 0.59 | 70 | 30 | 68 | 23 | 91 | 100 |
| 49 | 3 | 2 | 3 | 3.17 | 0.52 | 70 | 45 | 0 | 30 | 30 | 115 |
| 50 | 1 | 2 | 3 | 2.64 | 0.48 | 70 | 45 | 70 | 36 | 106 | 115 |
| 51 | 3 | 1 | 3 | 2.39 | 0.73 | 180 | 81 | 134 | 53 | 187 | 261 |
| 52 | 3 | 1 | 3 | 2.58 | 0.53 | 70 | 45 | 0 | 21 | 21 | 115 |
| 53 | 4 | 1 | 3 | 2.21 | 0.74 | 200 | 87 | 148 | 51 | 199 | 287 |
| 54 | 3 | 1 | 1 | 2.79 | 0.61 | 170 | 66 | 148 | 22 | 170 | 236 |
| 55 | 3 | 2 | 3 | 2.35 | 0.80 | 60 | 81 | 0 | 21 | 21 | 141 |
| 56 | 1 | 1 | 3 | 3.69 | 0.64 | 70 | 45 | 70 | 33 | 103 | 115 |
| 57 | 3 | 1 | 3 | 2.24 | 0.63 | 180 | 78 | 146 | 25 | 171 | 258 |
| 58 | 2 | 1 | 3 | 1.16 | 0.88 | 70 | 45 | 60 | 10 | 70 | 115 |
| 59 | 3 | 2 | 1 | 2.50 | 0.70 | 0 | 12 | 0 | 10 | 10 | 12 |
| 60 | 2 | 1 | 3 | 3.60 | 0.87 | 60 | 45 | 0 | 22 | 22 | 105 |
| 61 | 3 | 1 | 1 | 3.13 | 0.65 | 60 | 54 | 0 | 29 | 29 | 114 |
| 62 | 3 | 1 | 3 | 2.75 | 0.58 | 70 | 30 | 70 | 16 | 86 | 100 |
| 63 | 1 | 1 | 3 | 2.69 | 0.88 | 100 | 87 | 76 | 35 | 111 | 187 |
| 64 | 1 | 1 | 1 | 3.38 | 0.73 | 70 | 45 | 50 | 15 | 65 | 115 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 1 | 2 | 3 | 3.00 | 0.62 | 70 | 43 | 70 | 21 | 91 | 113 |
| 66 | 1 | 1 | 3 | 2.81 | 0.56 | 70 | 45 | 66 | 22 | 88 | 115 |

| ID | Ethnicity | Gender | QualificationStatus | GPA | TABE | PossibleAcademicYear | Possible Summer | Actual Academic | Actual Summer | Actual Overall | PossibleOverall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67 | 3 | 1 | 3 | 2.21 | 0.79 | 60 | 30 | 0 | 12 | 12 | 90 |
| 68 | 1 | 1 | 3 | 2.35 | 0.46 | 170 | 81 | 122 | 32 | 154 | 251 |
| 69 | 1 | 1 | 3 | 2.76 | 0.79 | 60 | 36 | 0 | 15 | 15 | 96 |
| 70 | 1 | 1 | 3 | 2.68 | 0.33 | 70 | 45 | 70 | 25 | 95 | 115 |
| 71 | 2 | 1 | 3 | 1.64 | 0.75 | 60 | 45 | 0 | 24 | 24 | 105 |
| 72 | 3 | 1 | 1 | 2.67 | 0.58 | 70 | 45 | 70 | 15 | 85 | 115 |
| 73 | 3 | 1 | 3 | 2.59 | 0.33 | 160 | 66 | 79 | 14 | 93 | 226 |
| 74 | 2 | 1 | 3 | 3.01 | 0.74 | 0 | 15 | 0 | 15 | 15 | 15 |
| 75 | 3 | 1 | 3 | 3.14 | 0.80 | 150 | 81 | 142 | 35 | 177 | 231 |
| 76 | 1 | 1 | 3 | 3.00 | 0.57 | 90 | 84 | 84 | 32 | 116 | 174 |
| 77 | 1 | 1 | 3 | 2.68 | 0.76 | 170 | 81 | 90 | 22 | 112 | 251 |
| 78 | 4 | 1 | 3 | 1.85 | 0.55 | 150 | 84 | 108 | 41 | 149 | 234 |
| 79 | 1 | 1 | 3 | 1.60 | 0.59 | 70 | 45 | 70 | 31 | 101 | 115 |
| 80 | 1 | 1 | 2 | 3.18 | 0.49 | 70 | 48 | 60 | 14 | 74 | 118 |
| 81 | 3 | 2 | 3 | 3.25 | 0.81 | 100 | 69 | 96 | 19 | 115 | 169 |
| 82 | 3 | 2 | 3 | 3.70 | 0.73 | 140 | 90 | 130 | 61 | 191 | 230 |
| 83 | 3 | 1 | 1 | 3.12 | 0.57 | 70 | 45 | 70 | 29 | 99 | 115 |
| 84 | 3 | 1 | 3 | 2.75 | 0.43 | 160 | 81 | 76 | 26 | 102 | 241 |
| 85 | 3 | 1 | 3 | 2.86 | 0.73 | 0 | 12 | 0 | 9 | 9 | 12 |
| 86 | 3 | 1 | 3 | 2.64 | 0.85 | 78 | 81 | 78 | 34 | 112 | 159 |
| 87 | 2 | 1 | 3 | 3.13 | 0.65 | 150 | 93 | 140 | 52 | 192 | 243 |
| 88 | 4 | 2 | 1 | 3.48 | 0.79 | 70 | 48 | 66 | 21 | 87 | 118 |
| 89 | 4 | 2 | 3 | 2.71 | 0.52 | 60 | 48 | 0 | 13 | 13 | 108 |
| 90 | 2 | 1 | 3 | 2.07 | 0.49 | 60 | 33 | 0 | 9 | 9 | 93 |
| 91 | 1 | 2 | 1 | 2.50 | 0.57 | 70 | 33 | 64 | 12 | 76 | 103 |
| 92 | 1 | 1 | 3 | 2.50 | 0.68 | 0 | 12 | 0 | 9 | 9 | 12 |
| 93 | 3 | 1 | 3 | 3.68 | 0.46 | 70 | 48 | 68 | 35 | 103 | 118 |
| 94 | 2 | 1 | 3 | 3.20 | 0.71 | 70 | 51 | 64 | 8 | 72 | 121 |
| 95 | 1 | 2 | 3 | 2.73 | 0.57 | 170 | 84 | 142 | 38 | 180 | 254 |
| 96 | 3 | 2 | 3 | 2.93 | 0.85 | 150 | 84 | 128 | 46 | 174 | 234 |
| 97 | 3 | 1 | 3 | 1.59 | 0.73 | 70 | 48 | 60 | 31 | 91 | 118 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 98 | 1 | 2 | 3 | 2.78 | 0.47 | 70 | 30 | 50 | 8 | 58 | 100 |
| 99 | 1 | 2 | 3 | 2.77 | 0.45 | 80 | 90 | 56 | 34 | 90 | 170 |

| ID | Ethnicity | Gender | QualificationStatus | GPA | TABE | PossibleAcademicYear | Possible Summer | Actual Academic | Actual Summer | Actual Overall | PossibleOverall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 1 | 1 | 2 | 2.88 | 0.34 | 70 | 27 | 56 | 14 | 70 | 97 |
| 101 | 1 | 2 | 1 | 2.50 | 0.48 | 70 | 27 | 44 | 0 | 44 | 97 |
| 102 | 3 | 2 | 3 | 3.12 | 0.79 | 110 | 51 | 86 | 22 | 108 | 161 |
| 103 | 1 | 1 | 3 | 2.77 | 0.28 | 70 | 42 | 68 | 25 | 93 | 112 |
| 104 | 1 | 2 | 3 | 2.36 | 0.44 | 0 | 12 | 0 | 10 | 10 | 12 |
| 105 | 3 | 2 | 3 | 2.36 | 0.64 | 160 | 87 | 130 | 35 | 165 | 247 |
| 106 | 3 | 1 | 1 | 3.86 | 0.79 | 0 | 12 | 0 | 12 | 12 | 12 |
| 107 | 3 | 1 | 3 | 3.06 | 0.79 | 0 | 12 | 0 | 12 | 12 | 12 |
| 108 | 4 | 1 | 1 | 3.33 | 0.54 | 0 | 12 | 0 | 7 | 7 | 12 |
| 109 | 3 | 1 | 1 | 2.12 | 0.81 | 100 | 45 | 88 | 14 | 102 | 145 |
| 110 | 1 | 1 | 3 | 2.69 | 0.45 | 180 | 87 | 112 | 45 | 157 | 267 |
| 111 | 1 | 1 | 1 | 2.68 | 0.54 | 70 | 30 | 66 | 13 | 79 | 100 |
| 112 | 3 | 1 | 1 | 2.10 | 0.75 | 170 | 87 | 88 | 26 | 114 | 257 |
| 113 | 3 | 1 | 3 | 3.17 | 0.66 | 60 | 87 | 0 | 20 | 20 | 147 |
| 114 | 1 | 1 | 2 | 3.00 | 0.68 | 70 | 27 | 66 | 6 | 72 | 97 |
| 115 | 1 | 1 | 3 | 2.48 | 0.72 | 180 | 99 | 160 | 53 | 213 | 279 |
| 116 | 1 | 1 | 3 | 3.35 | 0.77 | 70 | 48 | 68 | 45 | 113 | 118 |
| 117 | 1 | 1 | 3 | 1.93 | 0.70 | 0 | 12 | 0 | 8 | 8 | 12 |
| 118 | 3 | 1 | 3 | 2.32 | 0.63 | 70 | 48 | 56 | 16 | 72 | 118 |
| 119 | 3 | 1 | 3 | 1.70 | 0.51 | 110 | 45 | 80 | 22 | 102 | 155 |
| 120 | 3 | 1 | 3 | 3.44 | 0.70 | 160 | 87 | 88 | 14 | 102 | 247 |
| 121 | 1 | 1 | 3 | 2.55 | 0.57 | 70 | 30 | 68 | 6 | 74 | 100 |
| 122 | 1 | 1 | 3 | 2.86 | 0.30 | 70 | 27 | 56 | 17 | 73 | 97 |
| 123 | 1 | 1 | 3 | 2.22 | 0.70 | 80 | 93 | 72 | 36 | 108 | 173 |
| 124 | 1 | 1 | 3 | 2.07 | 0.46 | 0 | 18 | 0 | 10 | 10 | 18 |
| 125 | 3 | 1 | 1 | 1.93 | 0.61 | 60 | 48 | 0 | 6 | 6 | 108 |
| 126 | 1 | 2 | 3 | 1.65 | 0.51 | 120 | 96 | 82 | 57 | 139 | 216 |
| 127 | 1 | 1 | 1 | 2.81 | 0.40 | 70 | 42 | 68 | 24 | 92 | 112 |
| 128 | 3 | 2 | 1 | 1.92 | 0.70 | 70 | 45 | 54 | 17 | 71 | 115 |
| 129 | 1 | 2 | 1 | 2.14 | 0.57 | 18 | 0 |  |  | 16 | 18 |
| 130 | 4 | 1 | 1 | 2.57 | 0.76 | 18 | 0 |  |  | 18 | 18 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 131 | 1 | 1 | 3 | 2.57 | 0.62 | 18 | 0 | | 16 | 18 |
| 132 | 4 | 2 | 2 | 2.12 | 0.7 | 18 | 0 | | 18 | 18 |

| ID | Ethnicity | Gender | QualificationStatus | GPA | TABE | PossibleAcademicYear | Possible Summer | Actual Academic | Actual Summer | Actual Overall | PossibleOverall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 133 | 3 | 1 | 1 | 3.24 | 0.81 | 18 | 0 | | | 18 | 18 |
| 134 | 1 | 1 | 3 | 2.86 | 0.6 | 18 | 0 | | | 14 | 18 |
| 135 | 1 | 1 | 3 | 1.21 | 0.41 | 18 | 0 | | | 13 | 18 |
| 136 | 4 | 1 | 3 | 3.00 | 0.52 | 18 | 0 | | | 15 | 18 |
| 137 | 1 | 2 | 3 | 1.14 | 0.45 | 18 | 0 | | | 10 | 18 |
| 138 | 3 | 2 | 3 | 2.00 | 0.39 | 18 | 0 | | | 12 | 18 |
| 139 | 1 | 1 | 3 | 2.29 | 0.56 | 18 | 0 | | | 17 | 18 |
| 140 | 1 | 2 | 1 | 3.33 | 0.64 | 18 | 0 | | | 18 | 18 |
| 141 | 1 | 2 | 1 | 0.88 | 0.47 | 18 | 0 | | | 13 | 18 |
| 142 | 2 | 1 | 3 | 2.77 | 0.56 | 18 | 0 | | | 16 | 18 |
| 143 | 1 | 1 | 3 | 1.83 | 0.65 | 12 | 0 | | | 11 | 12 |
| 144 | 3 | 1 | 3 | 3.00 | 0.49 | 18 | 0 | | | 16 | 18 |
| 145 | 2 | 1 | 3 | 3.70 | 0.59 | 18 | 0 | | | 18 | 18 |
| 146 | 1 | 2 | 3 | 1.00 | 0.35 | 18 | 0 | | | 16 | 18 |
| 147 | 1 | 2 | 1 | 2.50 | 0.68 | 18 | 0 | | | 14 | 18 |
| 148 | 1 | 1 | 3 | 1.50 | 0.39 | 18 | 0 | | | 16 | 18 |
| 149 | 1 | 1 | 3 | 0.83 | 0.36 | 18 | 0 | | | 12 | 18 |
| 150 | 2 | 1 | 1 | 3.60 | 0.59 | 18 | 0 | | | 12 | 18 |
| 151 | 1 | 1 | 3 | 2.01 | 0.54 | 12 | 0 | | | 9 | 12 |
| 152 | 3 | 1 | 3 | 2.23 | 0.53 | 12 | 0 | | | 11 | 12 |
| 153 | 3 | 1 | 2 | 1.89 | 0.45 | 12 | 0 | | | 11 | 12 |
| 154 | 2 | 1 | 3 | 2.46 | 0.62 | 12 | 0 | | | 7 | 12 |
| 155 | 3 | 1 | 1 | 2.57 | 0.57 | 12 | 0 | | | 12 | 12 |
| 156 | 4 | 1 | 3 | 2.69 | 0.53 | 12 | 0 | | | 10 | 12 |
| 157 | 1 | 1 | 2 | 3.02 | 0.71 | 24 | 70 | | | 19 | 94 |
| 158 | 1 | 2 | 2 | 2.12 | 0.56 | 30 | 0 | | | 26 | 30 |
| 159 | 1 | 1 | 3 | 2.06 | 0.68 | 24 | 70 | | | 20 | 94 |
| 160 | 2 | 2 | 1 | 2.56 | 0.61 | 27 | 70 | | | 21 | 97 |
| 161 | 4 | 1 | 2 | 2.89 | 0.58 | 30 | 0 | | | 25 | 30 |
| 162 | 3 | 1 | 3 | 3.30 | 0.75 | 15 | 0 | | | 10 | 15 |
| 163 | 3 | 2 | 2 | 1.56 | 0.5 | 24 | 70 | | | 19 | 94 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 164 | 3 | 2 | 3 | 3.06 | 0.65 | 24 | 0 | | 21 | 24 |
| 165 | 1 | 2 | 3 | 1.96 | 0.59 | 27 | 70 | | 25 | 97 |

| ID | Ethnicity | Gender | QualificationStatus | GPA | TABE | PossibleAcademicYear | Possible Summer | Actual Academic | Actual Summer | Actual Overall | PossibleOverall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 166 | 1 | 1 | 2 | 2.30 | 0.61 | 30 | 0 | | | 25 | 30 |
| 167 | 1 | 1 | 3 | 2.58 | 0.54 | 24 | 0 | | | 20 | 24 |
| 168 | 4 | 1 | 3 | 2.96 | 0.57 | 24 | 70 | | | 18 | 94 |
| 169 | 2 | 1 | 2 | 1.15 | 0.39 | 12 | 0 | | | 5 | 12 |
| 170 | 2 | 1 | 3 | 1.56 | 0.49 | 18 | 0 | | | 15 | 18 |
| 171 | 1 | 2 | 3 | 2.45 | 0.67 | 18 | 0 | | | 16 | 18 |
| 172 | 1 | 1 | 3 | 2.69 | 0.68 | 24 | 70 | | | 18 | 94 |
| 173 | 3 | 2 | 3 | 2.75 | 0.71 | 21 | 70 | | | 18 | 91 |
| 174 | 3 | 1 | 3 | 1.25 | 0.54 | 24 | 70 | | | 19 | 94 |
| 175 | 4 | 2 | 1 | 1.36 | 0.42 | 12 | 0 | | | 11 | 12 |
| 176 | 4 | 1 | 1 | 2.05 | 0.51 | 12 | 0 | | | 8 | 12 |
| 177 | 3 | 2 | 3 | 3.05 | 0.67 | 12 | 0 | | | 10 | 12 |
| 178 | 3 | 1 | 3 | 2.08 | 0.59 | 24 | 0 | | | 22 | 24 |
| 179 | 3 | 2 | 1 | 3.60 | 0.68 | 30 | 70 | | | 26 | 100 |
| 180 | 3 | 1 | 3 | 3.10 | 0.68 | 30 | 70 | | | 24 | 100 |
| 181 | 3 | 1 | 3 | 2.06 | 0.54 | 24 | 70 | | | 20 | 94 |
| 182 | 2 | 2 | 2 | 2.51 | 0.52 | 24 | 0 | | | 17 | 24 |
| 183 | 3 | 2 | 3 | 2.15 | 0.42 | 12 | 0 | | | 10 | 12 |
| 184 | 3 | 1 | 3 | 2.11 | 0.39 | 21 | 70 | | | 18 | 91 |
| 185 | 1 | 1 | 1 | 2.86 | 0.48 | 24 | 0 | | | 19 | 24 |
| 186 | 1 | 1 | 3 | 2.23 | 0.57 | 12 | 0 | | | 9 | 12 |
| 187 | 1 | 1 | 3 | 3.10 | 0.59 | 12 | 0 | | | 11 | 12 |
| 188 | 3 | 1 | 3 | 1.56 | 0.49 | 24 | 70 | | | 21 | 94 |
| 189 | 3 | 2 | 3 | 0.89 | 0.38 | 24 | 70 | | | 15 | 94 |
| 190 | 1 | 1 | 3 | 1.89 | 0.41 | 12 | 0 | | | 6 | 12 |
| 191 | 1 | 2 | 2 | 2.56 | 0.64 | 21 | 0 | | | 17 | 21 |
| 192 | 1 | 1 | 3 | 2.51 | 0.58 | 12 | 0 | | | 9 | 12 |
| 193 | 3 | 2 | 3 | 2.78 | 0.62 | 21 | 0 | | | 18 | 21 |
| 194 | 1 | 1 | 1 | 2.67 | 0.6 | 24 | 70 | | | 22 | 94 |
| 195 | 4 | 1 | 3 | 3.25 | 0.75 | 12 | 0 | | | 9 | 12 |
| 196 | 1 | 1 | 3 | 1.26 | 0.45 | 12 | 0 | | | 8 | 12 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 197 | 3 | 2 | 3 | 1.78 | 0.48 | 18 | 0 | | 16 | 18 |
| 198 | 3 | 2 | 1 | 2.35 | 0.51 | 18 | 0 | | 18 | 18 |

| ID | Ethnicity | Gender | QualificationStatus | GPA | TABE | PossibleAcademicYear | Possible Summer | Actual Academic | Actual Summer | Actual Overall | PossibleOverall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 199 | 1 | 2 | 3 | 2.96 | 0.53 | 15 | 0 | | | 13 | 15 |
| 200 | 3 | 1 | 3 | 2.05 | 0.5 | 24 | 70 | | | 21 | 94 |
| 201 | 3 | 1 | 3 | 2.64 | 0.52 | 24 | 0 | | | 20 | 24 |
| 202 | 1 | 2 | 3 | 2.48 | 0.65 | 12 | 0 | | | 4 | 12 |
| 203 | 1 | 1 | 3 | 2.69 | 0.79 | 21 | 0 | | | 14 | 21 |

**Key**

**Ethnicity**

| *African American* | *Native American* | *Caucasion* | *Hispanic* |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

**Gender**

| *Female* | *Male* |
|---|---|
| 1 | 2 |

**Qualification Status**

| *First Generation Only* | *Low Income Only* | *Both* |
|---|---|---|
| 1 | 2 | 3 |

**Achievement**

*GPA + TABE*

**Engagement**

*Total Activities/Total Possible*

APPENDIX B

LETTER OF APPROVAL: USE OF UNIVERSITY'S NAME AND STUDENT FILES

RSU
ROGERS STATE
UNIVERSITY

28 March 2006

Oklahoma State University Institutional Review Board
RE: ReAnne Ashlock
The Influence of Demographic Variables on the Achievement and Engagement Levels of Upward Bound Students in Northeastern Oklahoma

Dear Board:

Please be advised the Ms. Ashlock is hereby granted permission to utilize data from the Rogers State Unversity Upward Bound program participants as described in Section 3 of her Application for Review of Human Subjects Research. Throughout the application, Ms. Ashlock has accurately described the Rogers State Unversity Upward Bound program and the data that is routinely collected from our participants.

Additionally, Ms. Ashlock is hereby granted permission to identify Rogers State Unversity within her thesis under the guidelines set forth in her Application for Review of Human Subjects Research. The TRiO programs housed at Rogers State Unversity, as well as, other similar programs throughout the state, will benefit greatly from the research proposed by Ms. Ashlock.

If you have any further questions or concerns, please do not hesitate to contact me. Thank you for your time and consideration in this matter.

Respectfully,

Sheree L. Hukill, MS, JD
Director
TRiO Special Programs

cc: ReAnne Ashlock
Dr. Michael Turner
Dr. Joe Wiley

CLAREMORE BARTLESVILLE PRYOR KRSC-TV RSU ONLINE
1701 W. Will Rogers Boulevard • Claremore, OK 74017-3252 • 918.343.7777 • www.rsu.edu

# APPENDIX C

# INSTITUTION REVIEW BOARD

**Oklahoma State University Institutional Review Board**

| | |
|---|---|
| Date: | Wednesday, April 05, 2006 |
| IRB Application No | ED06124 |
| Proposal Title: | the Influence of Demographic Variables on the Achievement and Engagement Levels of Upward Bound Students in Northeastern Oklahoma |
| Reviewed and Processed as: | Exempt |

**Status Recommended by Reviewer(s): Approved Protocol Expires: 4/4/2007**

Principal Investigator(s

ReAnne M. Ashlock
708 N. New Haven Ave.
Tulsa, OK 74115

Diane Montgomery
424 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sue C. Jacobs

Sue C. Jacobs, Chair
Institutional Review Board

VITA

REANNE ASHLOCK

Candidate for the Degree of

Master of Science

Thesis: THE INFLUENCE OF GENDER, ETHNICITY ON ACHIEVEMENT AND ENGAGEMENT LEVELS OF UPWARD BOUND STUDENTS

Major Field: Educational Psychology

Biographical:

Education: Graduated from Skiatook High School, Skiatook, Oklahoma in May 2000; received a Bachelor of Science in Social and Behavioral Science with a minor in Political Science from Rogers State University, Claremore, Oklahoma, in May 2004. Completed the requirements for the Master of Science degree with a major in Educational Psychology at Oklahoma State University in July, 2006.

Experience: Worked as a Copy Service Technician for Samson Resources from 2000 to 2003. Served as a mentor and tutor for first generation and low income college students at Student Support Services from 2000 to 2004. After obtaining my BS from RSU, began working as a Behavioral Rehab Specialist at Grand Lake Mental Health Center in Pryor, Oklahoma. In March, 2005, took position at Rogers State University in the Upward Bound Program as Academic Coordinator, 2005 – Present.

Professional Memberships: Council for Opportunity in Education (COE), Southwestern Association of Student Assistance Programs (SWASP), Oklahoma Division of Student Assistance (ODSA), Phi Theta Kappa Alumni, Psy Chi Alumni, Phi Kappa Phi.

Name: ReAnne Ashlock Date of Degree: July, 2006

Institution: Oklahoma State University Location: Tulsa, Oklahoma

Title of Study: THE INFLUENCE OF GENDER AND ETHNICITY ON ACHIEVEMENT AND ENGAGEMENT LEVELS OF UPWARD BOUND STUDENTS

Pages in Study: 95 Candidate for the Degree of Master of Science

Major Field: Educational Psychology

This study examined the relationship between the ethnicity and gender of UB students in relation to their engagement and achievement. The engagement of participants in relation to their academic achievement was also reviewed. The data was collected from the files of 203 former and current participants of a UB program located in northeastern Oklahoma. A dual measure was used to measure achievement. A combination of the students' GPA and their scores on an achievement test known as the Test of Adults Basic Education (TABE) made up the achievement variable. Engagement was calculated by determining the total number of activities a student participated in and dividing that by the actual number of chances they had to participate.

A significant correlation was found between engagement in UB and achievement. However, the correlation was weak. ANOVA analysis revealed that no significant differences existed between achievement and gender and ethnicity or between achievement and gender. However, significant differences were found between achievement and ethnicity. Post hoc tests revealed that the differences existed in the achievement scores of African Americans and Caucasians and between African Americans and Native/Hispanic Americans. In both cases African Americans scored lower on the achievement measure. No significant results were found in the analysis of engagement in relation to gender and ethnicity.

The results confirmed a relationship between engagement in the UB program and academic achievement, however, the weak correlation suggests the need for future studies to confirm this relationship. Since the program is formatted around improving achievement through engagement in pre-designed activities, understanding the ability of these activities to engage the students and ultimately improve achievement is extremely important for maintaining and improving program effectiveness. The low sample size in this study could have affected the strength of the correlation found, and should be increased in subsequent research. The relationship between achievement and ethnicity, in which African Americans are scoring low in comparison with the other groups in the program, suggests the need for future analyses as well as program reform aimed at improving the achievement levels of this group.

Advisor's Approval: _____