

**The Academic Success of Lottery Scholarship
Recipients Relative to Initial Eligibility, Housing
Status, Employment, Gender, and Academic Year**

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The Academic Success of Lottery Scholarship Recipients Relative to Initial Eligibility,
Housing Status, Employment, Gender, and Academic Year

A Field Study

Presented to

The College of Graduate Studies

Austin Peay State University

In Partial Fulfillment

of the Requirements for the Degree of

Education Specialist

Johnathan Button

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By

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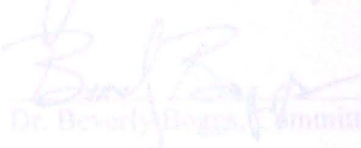
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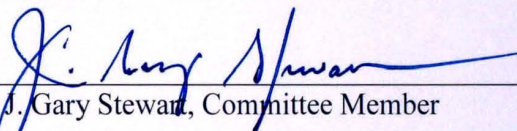
June, 2016

To the College of Graduate Studies:

We are submitting a field study written by Johnathan Button entitled “The Academic Success of Lottery Scholarship Recipients Relative to Initial Eligibility, Housing Status, Employment, Gender, and Academic Year.” We have examined the final copy of this field study for form and content. We recommend that it be accepted in partial fulfillment of the requirements for the degree of Education Specialist.



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Accepted for the Graduate and Research Council



Dean, College of Graduate Studies

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ABSTRACT

JOHNATHAN MICHEAL BUTTON. The Academic Success of Lottery Scholarship Recipients Relative to Initial Eligibility, Housing Status, Employment, Gender, and Academic Year (under the direction of DR. JOHN MCCONNELL III).

The Tennessee Education Lottery Scholarship provides financial assistance to numerous Tennessee high school graduates completing postsecondary education. Yet, the program has not been known for increasing student success. High school and college academic achievements were studied among students at Austin Peay State University to determine if statistically significant differences existed between the two. Additionally, this same group was studied in order to determine which segment of students could be considered the most at risk of losing scholarship eligibility. This information may eventually be utilized to target an at-risk population with a proactive retention program. Rather than merely react to students losing eligibility, this study endeavored to identify who was losing eligibility in order to develop proactive methods for not only continuously enrolling students but also helping them retain scholarship eligibility.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Various states have utilized state lotteries to fund higher education scholarship initiatives for several years. Examples of states doing so include Georgia and Tennessee. The Tennessee Education Lottery Scholarship (TELS) program was initiated in 2004 (Menifield, 2012). The initial need to pass the legislation required to implement and fund the program stemmed from the fundamental issue of a state population with a low average college enrollment rate (Menifield, 2012).

Although the TELS is an excellent initiative and provides funding for numerous Tennessee residents to attend college, dismal retention figures are associated with the program (Menifield, 2012). Therefore, the scholarship is not bolstering retention or graduation rates. Although data have been collected on a state level to identify groups of students who are performing at a lower level, colleges and universities have not concentrated as much on the issue.

Prior to 2010, the Tennessee Higher Education Commission (THEC) began reviewing the state's funding methodology used to compensate state colleges and universities (2010). For a considerable time, "funding to higher education institutions in Tennessee and across the nation was distributed based primarily on enrollments" (THEC, 2010). Therefore, school administrators were content with increasing the number of registered students each year in order to secure additional finances. Programs focused on attracting potential students to campuses were popular, and freshmen welcome events

were major occasions at the beginning of academic years. Yet, this concerned leaders, because it predominantly placed emphasis on attracting potential students rather than the successful graduation of current and prospective undergraduates (THEC, 2010).

To improve the funding model, an enrollment-plus formula was developed to incentivize student success (THEC, 2010). Student success would assumedly culminate in completion of a degree, but the enrollment-plus formula rewarded institutions that met “goals includ[ing] higher education and job placement rates, student satisfaction levels, and other variables” (THEC, 2010). Institutions were not as concerned about the progress students made throughout their college career, and several students were left to simply fend for themselves without available student success programs and campus wide attention towards retention. A culture was created where college funds were primarily funneled to recruitment initiatives rather than plans to retain both excellent and at-risk students.

Without these vital programs, students experienced scenarios where completing graduation requirements required additional time. In an atmosphere where schools are expected to grow and accomplish more with less state assistance, guaranteeing an expeditious yet educationally stimulating plan for graduation can benefit colleges and universities (Feldman, 2008). In fact, “one of the most efficient, cost-effective means to accommodate growth is to lessen time-to-degree [..., because] if students move through their academic programs efficiently, they graduate and make room for new students (Feldman, 2008, p. 21). Prolonging graduation can also have deleterious monetary repercussions.

Added expenses and unnecessary accrual of loans elucidated “economic realities that signal[ed] the need for better performance on measures of institutional productivity and student success” (McKeown-Moak & Mullin, 2014, p. 224). These issues were significant enough to force state leaders to review other options. Politicians were no longer primarily concerned about increases in enrollment. The principal goal of leaders shifted to retaining students and ensuring their graduation. The funding methodology for state institutions of higher learning began emphasizing outcomes based measures and rewarding institutions increasing efficiency. In contrast to the prior formula, “[t]he outcomes based model no longer include[d] student enrollment data (THEC, 2010). The model created “outcomes for universities includ[ing] progression (at 24, 48 and 72 hours), bachelors’, associates’, masters’, and doctoral degrees, research and service, student transfer, degrees per 100 full-time enrolled student and graduation rate” (THEC, 2010). Interestingly, this formula was not simply based on graduation rates but also on opportunities for participation in activities linked to student achievement.

The legislature’s intention was not to create a climate where schools worked industriously to meet certain retention rates in order to merely accrue additional finances. In fact, an outcomes based model was selected, in part, because it “[did] not have annual targets or benchmarks. Therefore, it [did] not punish institutions for failure to achieve a predetermined goal” (THEC, 2010). Schools were expected to increase graduation rates utilizing available resources. These approaches were considered to coincide with performance based funding which had the “ultimate goal ... [of creating] stronger incentives for institutions to adopt efficiency, effectiveness, and productivity

enhancements that allow[ed] them to graduate increasing numbers of student with available revenue” (McKeown-Moak & Mullin, 2014, p.224-225).

Performance-based funding and an outcomes based model may be considered catalysts for schools to make inequitable decisions related to student admission, exaggerate course grades, and aggressively compete with other institutions (Fain, 2014). In a scenario where an executive understands his or her organization’s finances depend upon employee performance, the temptation to hire applicants deemed “safe” is greater; the leader will be less likely to take a chance and hire someone with a modest graduation record and nonexistent work history even if the individual meets employment requirements. Similarly, colleges and universities funded according to performance or outcomes may encounter the same temptation.

Higher education institutions could attempt to enroll high-achieving high school graduates who are viewed as being at low-risk of performing below standards. Yet, less advantaged students who may not be as prepared to enroll at a university or college should also be considered when creating admission policies. Rather than encouraging discriminatory policies, “performance-based funding systems are becoming more equitable” (McKeown-Moak & Mullin, 2014, p. 225). Some states are offering monetary compensation to schools that care for at-risk populations, and “this encourages public colleges to not only maintain admission standards that promote student access but also to utilize intensive retention strategies that increase the likelihood of student success” (McKeown-Moak & Mullin, 2014, p. 225). The TELS can serve as a tool for retaining

students. However, to be effective, leaders must concentrate on developing methods leading to a higher probability of recipients maintaining eligibility requirements.

Fortunately, detailed institutional records related to scholarship retention are retained. Therefore, this problem can be studied in order to identify principle issues contributing to loss of the scholarship and possible resolutions to produce a more successful program. The information can be accessed via the institutional Banner system with appropriate approval from the Institutional Review Board and the university Registrar. While information is available from the Tennessee Student Assistance Corporation (TSAC) as well as the THEC, school specific information, obtained from Austin Peay State University (APSU), can yield comprehensive information to help institutional administrators develop customized support programs.

Purpose of the Study

The purpose of this study is to determine if there are differences between cumulative grade point averages (GPAs) of Lottery scholarship recipients, based upon the determinants of initial scholarship eligibility. If differences exist, the study will seek to identify the group or groups with differences and help determine if developing a mentorship program for an at-risk population of Lottery scholarship recipients would be beneficial. While there may be problems that do not require extensive research to remedy, this issue warrants study. If a widely utilized scholarship program only achieves a 50% or less success rate, an issue almost certainly exists. The problem may not stem from restrictive program regulations or insufficient award amounts. For instance, the TELS promulgated rules require students to maintain various GPA standards at 24

attempted credit hours benchmarks as well as continuous enrollment during the fall and spring semesters. Attempted credit hours benchmarks are benchmark intervals of 24 attempted college credit hours used to determine continuing TELS eligibility.

Some critics may attribute low retention rates to these regulations and campaign for less restrictive laws to be enacted. However, without researching the issue, these individuals are merely considering regulations as a barrier to student success and not working to ascertain additional underlying issues that may be negatively impacting students. Therefore, it is important to study data related to the scholarship in order to understand why the issue is occurring. The results of the study could potentially increase the scholarship retention rate for a significant number of individuals. The graduation rate of students may also increase, because they are likely to be more capable of enrolling and paying their tuition and fees in full.

The cost of attending college has recently become a more prevalent topic among parents, students, and higher education employees when discussing the likelihood of being admitted to and enrolling in courses at a university or college. Several examples of stories related to college savings plans, student loan debt, and increases in tuition and fees can be reviewed in newspapers, television or online. Students and parents are even questioning if the value of a college education outweighs enrollment costs. Within this type of climate, helping individuals maintain scholarship eligibility is imperative.

As previously stated, the TELS is a program focused on increasing initial enrollment at institutions of higher education. The increase in enrollment is purportedly achieved by alleviating financial barriers for students from a wide variety of

circumstances. This concept appears to have the potential to create beneficial results. However, that has not been the case (Menifield, 2012). Although many students are able to attend their freshmen year of college debt free, numerous college students fail to maintain eligibility requirements after their initial spring semester. These individuals are then faced with making a difficult decision; should they continue enrolling in courses and seek out alternative methods for paying tuition and fees, such as student loans, or should they obtain employment and withdraw from school?

Since this study aims to identify the group or groups of Lottery scholarship recipients enrolled at APSU who are most likely to become ineligible for the scholarship, the results can be utilized by administrators to develop advantageous retention programs for those individuals. Otherwise, students may lose scholarship eligibility. The concern with this scenario lies in the semesters when students are expected to continue attending courses without the benefit of scholarship subsidy. Numerous students must choose to apply for Federal loans or rely on the generosity of family members or friends to continue pursuing their degrees during this period. This scenario can leave people feeling powerless and in a position where they elect to withdraw from an institution. Though discouraging, withdrawing from school is a particularly alluring choice for students from families experiencing financial difficulties. Though “college students in their late teens and twenties [become more] semiautonomous from their families as they take on the responsibilities of independent living [some] may be compelled to contribute to the economic well-being of their families” (Terriquez & Gurantz, 2014). Students

confronting these challenges may be more likely to not enroll in courses when required to pay higher out-of-pocket expenses to attend.

Generating funds earmarked towards promoting retention can help reduce the likelihood of a student withdrawing from school. This objective should not be marginalized. Some administrators may be opposed to rewarding students who were unable to maintain minimum qualifications. Yet, the reasons for these missteps are not always known. For example, students might have experienced deaths of immediate family members or contracted illnesses that significantly affected their ability to perform well in courses. Given the chance, these individuals could earn superior grades during a future semester. However, they may lack the opportunity with the absence of financial options.

APSU officials implemented a program five years ago, known as the Regaining Hope Scholarship. This program was designed to assist sophomores and juniors who failed to maintain Lottery scholarship GPA eligibility. The assistance was provided in the form of a scholarship as well as mentoring. Although this initiative did prove beneficial for increasing student retention, it was a reactive method implemented with the goal of assisting students who failed. In order to become more successful, institutions must not merely react to issues, they should also develop proactive solutions aimed at eliminating potential obstacles before they arise.

Significance of the Study

Charles Menifield (2012) studied information pertaining to initial enrollment of Lottery scholarship recipients and retention of the scholarship. Menifield (2012) found

that the program did increase access to higher education but failed to increase retention and graduation rates. This study builds on Menifield's research by identifying groups of at-risk students at APSU. Although data pertaining to the scholarship are collected and reviewed on a state level, an institution can benefit from understanding not only generalized data based on a state population, but the actual barriers affecting enrolled students at the respective institution. The results of the study can help ensure the success of any developed retention programs. If retention programs were developed at the university and based on the state's results, the institution may fail to target the most vulnerable populations.

Research Questions

1. Are there statistically significant differences between the cumulative college GPAs of Lottery scholarship recipients, based upon the categories of initial scholarship eligibility relative to gender, employment status, housing status, and academic year, and are there statistically significant interactions among the variables?
2. Are there statistically significant differences between the final cumulative high school GPAs and ACT scores of Lottery scholarship recipients, based upon variables identified to have statistically significant connections?

Research Hypotheses

1. The 24 attempted credit hours TELS GPAs of Lottery scholarship recipients is significantly different based upon the categories of initial scholarship eligibility

relative to gender, employment status, housing status, and academic year and significant interactions exist among the variables.

2. The final high school GPAs and ACT scores of Lottery scholarship recipients is significantly different based upon variables identified to have statistically significant connections.

Limitations

There were specific limitations related to this study. For instance, the employment category of the study was based upon Free Application for Federal Student Aid data. These records are typically manually entered by students or parents or downloaded directly from the Internal Revenue Service and was assumed to be accurate in order to determine students' employment statuses. The researcher assumed academic and non-academic information provided by the Office of the Registrar was accurate.

Assumptions

Researchers who review TELS data will likely notice academic achievement is not comparable between various groups of students. For instance, students from low-income families may earn lower average grades than students whose parents net higher incomes. This information has already been established by the Higher Education Working Group of the Lottery Stabilization Task Force (2011). Personal experiences also indicate students who are eligible for General Assembly Merit Scholarship (GAMS), the Aspire Award, or only Tennessee Hope Scholarship funds are unlikely to earn similar grades. Therefore, it is predicted that statistically significant differences in final high school GPA and ACT scores will be observed among TELS awardees.

CHAPTER II

LITERATURE REVIEW

The importance of researching the effects of the Tennessee HOPE Scholarship on college access and retention has been confirmed by previous research. Understanding how successful students are at retaining the scholarship based upon current practices is important, because the data can help researchers ascertain methods for promoting enhanced program effectiveness. Merely recognizing a need for improvement exists is not sufficient. Leaders should strive to meet that need. To do so, these individuals must first comprehend what types of students are losing awards and variations among the groups.

Success in college does not commence the first day of classes nor is it based solely upon experiences in collegiate settings; students are primed to anticipate the challenges of higher education courses during high school. Therefore, academic success in high school should be a variable researched to better recognize the relationships between academic success, external motivations, and scholarship retention.

Statistics related to this topic are available from the THEC. However, the presented conclusions are based upon data received from institutions across the state. This study endeavors to review several variables in order to identify at-risk populations of students enrolling at APSU. Creating an environment promoting student success is not dependent upon merely identifying students who need assistance.

Identification of Variables

For the first part of the study, TELS GPA at the 24 attempted credit hours benchmark was selected as the dependent variable. Independent variables included initial TELS eligibility determinants, gender, employment status, academic year, and choice of campus residency or residing off campus. They were chosen because all of the variables can potentially impact a student's TELS GPA, and the focus of this portion of the study was to determine which group of Lottery Scholarship recipients were at the highest risk of not maintaining continuing scholarship eligibility requirements.

The variables are also related to one another. If a student works while attending courses, they may be less capable of focusing on school work and not earn grades comparable to their peers who are not required to work while enrolled in college. Data provided by the THEC (2009) have also revealed variances in academic achievement according to students' genders and socio-economic backgrounds. Whether students live on campus or commute to classes can also have a significant impact on their success. Students who reside in a dormitory may be more likely to engage in campus activities and feel involved. Conversely, commuters may not feel as connected to the institution and lack encouragement to regularly attend courses and maintain good grades. A study based on the Georgia HOPE Scholarship, conducted by Cornwell, Lee, and Mustard (2005), found that course withdrawals increased among freshmen scholarship recipients living on campus. Due to the results of this study, housing was selected as a variable to consider.

For the second portion of the study, statistically significant factors identified during the first test were included as independent variables. The variables included initial TELS eligibility categories and employment status. These groupings include Tennessee HOPE Scholarship, Lottery Aspire Award, and GAMS eligibility. Use of these determinants ensures the researcher is including some of the aforementioned variables, because the eligibility types can help categorize students according to prior academic achievement and/or financial background. For example, the supplemental Aspire Award requires household income to remain at or below \$36,000 annually. Therefore, a student eligible for only the Tennessee HOPE Scholarship or GAMS would not have a household income level at or below \$36,000. The GAMS is awarded to students who have earned a minimum final high school GPA of 3.75 and a minimum cumulative American College Test (ACT) score of 29. Therefore, this group of individuals has a higher level of academic achievement. However, due to TELS policies requiring institutions to award a student the Aspire Award even if eligible for a GAMS, academic achievement and household income qualifications cannot always be assumed based upon eligibility type.

This section of the study reviewed final high school GPA and ACT scores to determine if there were statistically significant differences between the variables in relation to the statistically significant categories observed during the first section of the study. Therefore, final high school GPA and ACT scores were considered dependent variables. These variables have been included in a number of studies related to the TELS. Not only do they provide a researcher with helpful information to determine which group or groups of students are at the highest risk of losing scholarship eligibility, they can also

help determine if students with statistically significant differences in college achievement were classified at the same levels of academic achievement prior to enrollment in college. Menifield (2012) used these same variables to discuss the success of the TELS in Tennessee and identify groups of students who could have benefited from some type of assistance.

Impact of Financial Aid on Higher Education

A high percentage of enrolled college students utilize some type of financial aid to pay their tuition and fees. Therefore, financial aid has a significant impact on many students' decisions whether or not to attend college, which institution to attend, and if they should continue enrolling to earn their degrees. To recognize the importance of financial aid and its relationship to higher education, review of legislative policy decisions and the history of various programs is imperative.

Brian Fitzgerald (2004) described legislative policies and their impact on college prospects in a study related to "missed opportunities" (p. 40). It is important to note that nearly 40 years ago, federal and state governments initiated a bold experiment: to create a system of higher education that would enable the Baby Boom generation to enroll in college in historic numbers. Student aid programs—especially grants—performed an essential catalytic role in this experiment, providing unprecedented opportunity for low- and moderate-income families by lowering financial barriers and ensuring that any qualified student would have access to higher education regardless of family economic circumstances. (Fitzgerald, 2004, p. 10)

The various programs created provided billions of dollars to students who were considered in need of financial assistance (Fitzgerald, 2004). It comes as no surprise that “millions of students who could not otherwise have afforded college were able to enroll and attain degrees” (Fitzgerald, 2004, p. 11). These programs were concentrated on increasing college enrollment to provide a satisfactory population of qualified workers to fill employment opportunities (Fitzgerald, 2004). The availability of aid helped individuals enroll and graduate and “propelled unparalleled economic growth in the late 20th century” (Fitzgerald, 2004, p. 11). Based on this evidence, the experiment initially accomplished the intentions of legislators.

The initiative may have created preliminary benefits. However, several more recently enacted policies have created additional barriers to college access and student success (Fitzgerald, 2004). For the purposes of this study, state aid policies will be reviewed. When people join forces to accomplish a common goal, they are usually more capable of obtaining their objectives. Relative to higher education, “a common commitment to opportunity over [...a period of] four decades resulted in significant state investments in higher education to increase institutional capacity and keep tuition prices low” (Fitzgerald, 2004, p. 12). Essentially, the federal government and various state governments worked together to ensure tuition and fees were affordable for students who desired to earn postsecondary degrees. However, Fitzgerald (2004) found that officials eventually began “underfunding need-based grant aid” (p. 12), and the burden of paying for college steadily increased for students. The financial crisis of the late 2010s exasperated the issue because some states could no longer afford to fully fund all state

scholarship or grant programs. In addition, state funding for college and university operations also declined.

TELS Program

The TELS is a state program designed to alleviate barriers to college access. Its funding was not significantly impacted during the recession, partly because it was linked to state lottery proceeds rather than tax revenues. Still, although the program has helped alleviate barriers to enrollment, it may not be promoting graduation. According to a legislative report prepared by the Higher Education Working Group of the Lottery Stabilization Task Force (2011), “TELS is not designed with incentives for retention although the possibility of losing the scholarship may motivate students to work harder” (Are TELS policies aligned, para. 1). A possible alternative to current TELS funding would be “awarding TELS retroactively” (Higher Education Working Group of the Lottery Stabilization Task Force, 2011, Policy Alternatives, para. 1). The report indicated “this would be a significant cost-saving measure, as 41% of first time freshmen ... [during 2010-2011] finished their first fall term with less than a 2.75 GPA” (Higher Education Working Group of the Lottery Stabilization Task Force, 2011, Policy Alternatives, para. 2). However, “higher education officials expressed concern that making TELS a retroactive award would disproportionately harm low-income students and impact their college-going behavior” (Higher Education Working Group of the Lottery Stabilization Task Force, 2011, Policy Alternatives, para. 2). This is a valid argument, because many low-income students might find paying tuition and fees without a \$1,750 to \$2,750 scholarship difficult.

To remedy this issue, the group determined the costs “could be offset by institutional bridge loans or deferments” (Higher Education Working Group of the Lottery Stabilization Task Force, 2011, Policy Alternatives, para. 2). This action would require institutions to defer student payments until the end of a semester. The first issue with this alternative is how students who did not achieve eligibility requirements for the scholarship would then afford to pay their deferred tuition and fees. If they were unable to pay, the school would be left without payment. Although this plan is innovative, it does not promote creating assistive programs to help students earn better grades. Yet, if it were implemented, schools might be forced to create such programs.

The THEC (2012) researched various state lottery programs to determine how the TELS compared to them. The study found that Tennessee’s program required less restrictive eligibility standards than several others (THEC, 2012). In addition, “Tennessee, Florida, Georgia, and South Carolina had multiple lottery scholarship programs, reflecting their efforts to serve students with differing academic abilities and financial needs” (THEC, 2012, p. 21). The report also found that “among the eight lottery programs [reviewed], only Tennessee’s ASPIRE and ACCESS programs include[d] demonstrated financial need as one of the eligibility criteria” (THEC, 2012, p. 21). Even though these programs require a specific level of financial need for qualification, the students must also earn a minimum ACT score or final high school GPA to be determined eligible. According to THEC (2012), “research has shown that using traditional measures, such as high school GPA and standardized test scores, results in students who were likely to attend college even without the public assistance receiving a

disproportionate number of awards” (p. 21). Based upon this information, it comes as no surprise that “programs focused on students with demonstrated financial need typically have smaller enrollments than the base programs” (THEC, 2012, p. 21). This information is important to keep in mind when determining which group or groups of eligible scholarship students to include in focused retention programs.

According to a THEC report (2009), 84% of first-time freshmen recipients were White, and only 16% of the recipients belonged to a minority. These data show the population of students receiving the Tennessee HOPE Scholarship are overwhelmingly White. Fifty-four percent of the first-time freshmen qualified for the Tennessee HOPE Scholarship based upon ACT and high school GPA (THEC, 2009). The need-based Aspire Award is a supplement to the Tennessee HOPE Scholarship portion of the award and is provided to students whose household income is below \$36,000. About 27% of the awardees belonged to this eligibility group (THEC, 2009). This information is important to study, because it offers basic information related to scholarship recipients throughout Tennessee. Research must also be conducted at an institutional level, because the data could be different. Based upon a school’s region, recipients may belong to different eligibility groups. For example, a college or university may award more than 27% of its applicants the Aspire award.

Scholarship Retention and Increasing Student Retention and Graduation Rates

The importance of adequate staffing. In an economic climate where colleges and universities are forced to decide between eliminating or freezing staff and faculty positions or increasing mandatory tuition and fees, institutions are negatively impacted.

The dismissal of staff or faculty can have several negative impacts on colleges and universities. Employees, on an individual level, are only capable of completing a specific amount of tasks or responsibilities. There are scenarios where offices need a minimum number of employees to merely comply with federal regulations. The Office of Student Financial Aid and Veterans Affairs is an example of such a department. This office must adhere to not only federal policies but also state and institutional rules. Occasionally, regulations are not only excessive in quantity but also extraordinarily challenging to administer.

If only the minimum number of employees, vital to remaining in compliance with federal, state, and institutional policies and procedures, are hired or retained, how are students being counseled? If these individuals are not properly advised about eligibility regulations, they are not receiving adequate customer service and are more likely not to adhere to those policies. For example, one terminating event for the Tennessee HOPE Scholarship is a change from full-time to part-time enrollment. Per chance, students may review this policy on the TSAC website. However, this is unlikely. College or university staff members have a duty to ensure students are aware of this type of information. If an institution fails to communicate a requirement to remain enrolled full-time after the institution's census date, a number of scholarship recipients may, unknowingly, have their eligibility terminated due to an enrollment change and not failure to meet a GPA standard.

Financial impact to low-income students. Scholarship retention affects the probability of students maintaining continuous enrollment, because scholarship funding

could be the difference between affording college and not being able to attend. Imagine a scenario where low-income students have been admitted to a university and use Federal Pell Grants and Tennessee HOPE Scholarships to pay mandatory tuition and fees as well as purchase necessary books and supplies. They do so for two academic years but then fail to meet minimum TELS GPA requirements. Their unsatisfactory progress requires staff members to cancel future scholarship eligibility until the students are able to increase their GPAs to a minimum requirement at future benchmarks. The students then find themselves in positions where they are not merely unable to pay tuition and fees but are also not able to purchase materials essential to successful outcomes in courses. For high-income households, this scenario may not be considered a weighty issue. Yet, “most low-income families are extremely sensitive to the price of college because they can help meet only a small portion of the expenses and are very dependent on grant [or scholarship] aid” (Fitzgerald, 2004, p. 12).

At this juncture, enrollees and parents may consider applying for student loans. Although federal student loans are, typically, readily accessible funds intended to help pay mandatory tuition and fees and other higher education expenses, use of these monies should be limited. Unfortunately, when students do not qualify for sufficient gift aid to cover expenses, “long hours of work and heavy borrowing become essential components of many low-income students’ financing strategies” (Fitzgerald, 2004, p. 13). Fitzgerald’s (2004) research indicated that “sixty-five percent of all low-income college students work[ed] 24 hours a week, on average, while enrolled” (p. 13) in college courses. However, “many of [the students at four-year public colleges] work more: nearly a third

work more than 35 hours a week” (Fitzgerald, 2004, p. 13). For the purpose of this study, the focus will be on the additional stress these students experience. The increased probability of a student not graduating and the potential for this scenario to reduce future gift aid will be emphasized.

It is imperative to understand that “excessive work reduces persistence and degree completion from 79% for low-income students working relatively few hours to only 47% for students working more than 35 hours per week” (Fitzgerald, 2004, p. 13). If these students were able to retain the Tennessee HOPE Scholarship and some other type of gift aid, they would be less likely to work excessively. Yet, when the Tennessee HOPE Scholarship is lost and students decide to work more hours or apply for federal education loans, research demonstrates those same individuals have a lower chance of graduating (Fitzgerald, 2004).

These issues make scholarship retention an even more important topic to study. Scholarship funds are superior monetary options for degree attainment, because students are not responsible for repaying the awards, with interest, at a future point. Loans may impede individuals’ successes after college due to the burden of repayment. Academic achievement may also be in jeopardy if students contemplate the reality of repaying their loans and consider a college education less advantageous than withdrawing and not procuring additional debt. These factors are related to the concept of student persistence.

Ness and Tucker (2008) researched the impact the Tennessee HOPE Scholarship had on students’ decisions whether or not to enroll in college. The researchers indicated “students’ socioeconomic status (SES) and race or ethnicity [were] the most common

obstacles to college access” (Ness & Tucker, 2008, p. 570). The current study seeks to identify at-risk students to include in an effective program for increasing scholarship retention, but Ness and Tucker’s (2008) research reviewed information pertaining to “the effects of [merit-based] programs on high school students as they consider[ed] the decision to attend college” (p.572). This is relevant to scholarship retention, because it helps administrators understand what types of students are being awarded the funds and how they perceive higher education. According to Ness and Tucker (2008), African American students were more likely to perceive merit-based aid as a significant factor in their choice to attend college or directly seek employment after high school.

Influence of Student Persistence Factors

Individuals create goals for themselves. They could experience external barriers when attempting to attain those objectives. However, there are also psychological dynamics to consider. Numerous factors influence how dedicated a person is to achieving goals. In the case of attaining a college degree, research has been conducted pertaining to the subject of student persistence, because student retention is a major issue impacting the success of higher education institutions. Jackson (2007) discussed Tinto’s multivariate model and the theory that

individuals enter[ed] institutions of higher education with a range of different family and community backgrounds (e.g., as measured by social status, parental education, and size of community, a variety of personal attributes (e.g., sex, race, and physical handicaps), skills (e.g., intellectual and social), financial resources, dispositions (e.g. motivations, intellectual, social, and political preferences), and

varying types of pre-college educational experiences and achievement, (e.g. high school GPA). Each of these attributes [was] posited as having a direct impact upon departure from college. In addition, each attribute impact[ed] departure indirectly through its effect upon the continuing formulation of individual intentions and commitments regarding future education, career activities and choices. (pp. 26-27)

Jackson's (2007) literature review focused on Tinto's model and its explanation of factors that affected student persistence. Student persistence does impact a student's enrollment choices and, in turn, the financial viability of an institution. Yet, it may also impact the level of a student's determination to earn passing grades, maintain an original enrollment status throughout a term, and, ultimately, retain merit based scholarships which require specific academic continuing eligibility requirements.

Factors such as health, socioeconomic status, and ethnicity also impact student persistence. Schools attempting to increase retention rates should not only review academic standards and the number and diversity of facilities available on campus. Administrators should also be attentive to students' personal needs. Patrick O'Keefe (2013) mentioned several at-risk student populations in his study related to college retention. The elements related to student persistence also pertain to the retention of scholarships.

Financial resources have a direct impact on a student's choice of initial college or university enrollment. For example, an individual who is concerned about paying tuition and fees and affording a degree may elect to enroll in an institution within driving radius

of his or her home. This decision means avoiding paying the additional expenses of campus housing and a meal plan. Although these expenses are not paid and the student is able to reside at home with his or her parents, the individual may not have as positive a college experience as someone who elects to reside on campus. *first-time freshmen,*

A study completed by Hand and Payne (2008) found that first generation students from an Appalachian university were more likely to consider financial pressures a major concern. Additionally, the students whose parents had attended college were more likely to enroll and succeed (Hand & Payne, 2008). These individuals were probably raised to consider college as a viable option for their future, since their parents had attended. They may have also been more equipped for the rigors of college life since their parents could share their experiences and prepare the student for what they would encounter. Imagine two students from different households attending college. The first student lived in a home where his parents had never enrolled in a post-secondary institution, and the second student's father and mother both earned bachelor's degrees. The second student enrolled at a university and quickly became acclimated to her surroundings, because she *scholarship* understood how to build a decent schedule of classes and was taught effective study skills by her parents. However, the first student found himself in an unknown environment and scheduled too many demanding courses simultaneously. Since his parents had never *scholarship* attended college, he had not been taught how to organize and study for exams or manage his time wisely. While the transition was stress-free for one individual, it was especially difficult for the other. In this type of scenario, the first student may not be as persistent *scholarship*

and decide to willingly withdraw from courses unless the institution intervened and provided some type of academic support.

Financial Benefit of Increased Student Retention for Institutions

Although it is important for admission's offices to admit first-time freshmen, newly admitted students do not solely support increasing or maintaining enrollment figures; consistent matriculation of continuing students is also imperative and has significant impacts on an institution's enrollment. Hand and Payne (2008) cited Green (1985) who pointed out that "stable enrollments ultimately depend on the retention of currently enrolled students as well as the steady inflow of new students" (p. 4). Based upon this information, "it is logical for an institution to invest in retaining its students, particularly those who are considered at risk such as first-generation students" (Hand & Payne, 2008, p. 4).

APSU experienced a period of unprecedented enrollment growth from 2005 through 2011 (APSU Institutional Research, 2014). Student head count increased by more than 23% (APSU Institutional Research, 2014). Mitchell, Palacios, and Leachman (2014) cited the State Higher Education Executive Officers' Association and specified that what was referred to as "the 'baby boom echo' caus[ed] a surge in the 18 to 24-year-old population, [and] enrollment in public higher education increased by about 1 million full-time equivalent students, or 10 percent, between the beginning of the recession and the 2012-2013 academic year" ("Limited revenues must support," para. 1). During a portion of that time, 2007-2009, the United States was experiencing a major recession (Mitchell et al., 2014). Coincidentally, "the recession also played a large role in swelling

enrollment numbers, ..., reflecting high school graduates choosing college over dim employment prospects in the job market and older workers entering classrooms in order to retool and gain new skills” (Mitchell et al., 2014, “Limited revenues must support,” para. 2). During this same time period, due to a reduction in federal funding and substantial decreases in state tax revenues, state governments were forced to make difficult budgeting decisions and reduce funding for higher education (Mitchell et al., 2014).

This reduction in state funding necessitated an increase in tuition costs at institutions of higher education throughout the state. The Tennessee Board of Regents (TBR) voted to increase tuition rates at both community colleges and universities for a number of years. The Chancellor of the TBR, John Morgan, suggested that the increases in fees “reflect[ed] an unfortunate but expected continued shift of funding responsibility from the state to ... students” (Greppin-Watts, 2012). This shift of funding responsibility meant retention of financial aid and scholarships was even more important for students to be able to continually enroll. Discussions have taken place regarding the necessity of such increases, but John Morgan indicated that

on a per student basis, the amount of money our institutions [had] available to spend [was] lower than in 2009 [...., and] even with the base proposed fee increases, the change in recurring revenue available at our institutions (adjusted for inflation) [would] be an average of 9.7 percent lower at our community colleges than in 2009, 5.1 percent lower on average at our universities, and 6.7 percent lower at the technology centers. So it [was] important to note that while

the price [increased], the cost—the amount ... [spent] per student—remain[ed] lower than it was three years ago. (Greppin-Watts, 2012)

Interestingly, a portion of the increase in funding was used to support programs created at the institutions to proliferate student success and help individuals acclimate to college (Greppin-Watts, 2012).

APSU was not exempt from increasing tuition rates. However, the increases requested by the university were modest in comparison to some sister institutions. For example, in 2012, APSU was approved for the lowest fee increase of 3.4% among four-year public institutions (Greppin-Watts, 2012). Additionally, the university was approved for the lowest fee increase of 8.8% during 2011 (Greppin-Watts, 2011). The lower increases were partially attributed to enrollment growth at the university, which permitted administrators to distribute new increases to operating expenses amongst a larger student body. Therefore, the percentages of tuition increases required of students on an individual level were not as high as they would have been in a scenario with decreased or even stable student enrollment figures. This example further exemplifies the significance of student retention.

Performance Funding and an Outcomes Based Funding Methodology in Tennessee

Introduction of performance funding in Tennessee. Prior to the development of an outcomes based funding methodology in Tennessee during 2010, universities and colleges endeavored to maximize enrollment of new and continuing students (THEC, 2010). This was a common practice, because a significant portion of higher education funding was determined according to enrollment figures rather than outcomes for

students. Therefore, “the main policy objective incentivized was increased enrollment rather than efficiency in or production of degrees” (THEC, 2010, Introduction section, para. 1). The THEC (2010) recognized this unbalanced policy and, “[in 1979,] “attempt[ed] to increase degree completion ...[by] incorporate[ing] a small, but robust performance funding piece to the enrollment-based formula ... to reward institutions for success in meeting certain state goals for higher education” (Introduction section, para 1). This addition “included higher graduation and job placement rates, student satisfaction levels, and other variables” (THEC, 2010, Introduction section, para. 1). This was the first policy concentrated on shifting major state funding for higher education institutions away from enrollment statistics to performance dynamics.

In fact, “Tennessee was the first state to base a portion of state funding for higher education not upon student head count, but on institutional performance, particularly in enhancing student learning outcomes” (Banta, Rudolph, & Van Dyke, 1996, p. 23). The policy

gave public two and four-year institutions an opportunity to earn a budget supplement of up to two percent of the instructional component of its education and general budget for carrying out the following activities: (1) obtaining accreditation for accreditable [sic] academic programs; (2) testing graduating students in their major fields and in general education using standardized externally developed examinations, and—for additional credit—demonstrating that graduates score[d] at or above national averages on these tests; (3) surveying enrolled students, recent graduates, and/or community members/employers to

assess their satisfaction with the institution's academic programs and student services; and (4) conducting peer reviews of its academic programs. (Banta et al., 1996, pp. 23-24)

Performance funding may have been more equitable than providing financial support based upon enrollment. However, there were concerns related to performance funding that had the potential to reduce the initiative's effectiveness.

Concerns related to performance funding. For the purpose of increasing the effectiveness of performance funding, leaders should be aware of concerns related to the initiative. According to an article in an ASHE Higher Education Report, “[a] sentiment that [was] quite common among institutional officials [was] that performance funding ... had little real impact on institutional performance and it [was] largely a symbolic practice” (Obstacles to the Effectiveness, 2013, p. 57). If this were the case, there would not be a meaningful incentive for schools to implement programs with the ability to increase student success. The benefit of reviewing this study is that it provides details pertaining to the possible obstacles of implementing performance funding. To appreciate the consequence of Tennessee HOPE Scholarship loss, a person must be aware of the history of state higher education funding in Tennessee.

According to a report created by the THEC (2010), “[s]tates [had] long sought to find an equitable way to fund institutions of higher education in a manner that [was] stable and yet also [prompted] institutions to be more productive and efficient” (Introduction section, para. 1). The performance funding initiative introduced in 1979 had not produced the outcomes originally intended, but it did “[produce] moderate results”

(THEC, 2010, Introduction section, para. 2). Performance funding was intended to promote student success, but it had adverse effects on higher education institutions. A report included in the ASHE Higher Education Report described several unplanned consequences of implementing performance funding initiatives. Institutions may endeavor to achieve many different missions (Unintended Impacts, 2013). Yet, performance funding can cause colleges to “deemphasize missions that are not rewarded or only minimally rewarded by the performance funding program” (Unintended Impacts, 2013, p. 73). This is not to suggest those missions were not impactful, but they were not factored into state funding calculations as much as other objectives.

The issue of “[g]rade inflation and weakening of academic standards” (Unintended Impacts, 2013, pp. 73-74) was also a concern presented. Academic standards should be developed so the student is capable of excelling while also experiencing challenging situations. If a curriculum is not stimulating, a student may not be as encouraged to learn and might simply enroll in a course to obtain a perceived easy grade. The weakening of academic standards would likely permit students to retain scholarship eligibility at a higher rate as well. Yet, those individuals would not be as prepared for the employment challenges they may have encountered after graduation (Obstacles to the Effectiveness, 2013). The research included in ASHE Higher Education identifies several issues that arise due to performance funding, but it does not identify the potential benefits of the program schools can utilize to increase student success (Obstacles to the Effectiveness, 2013). While the program may have negative consequences, it is also likely to produce beneficial results as well.

Development of an outcomes based funding formula. The limitations of performance based funding, led to the creation of an outcomes based funding methodology in Tennessee. This methodology required institutions of higher education to review practices in order to develop new initiatives focused on increasing the retention and graduation of students. Performance components were no longer a simple addition to enrollment based funding; they became the primary basis for higher education funding (THEC, 2010). The report written by THEC (2010) detailed the components of the outcomes based funding methodology and explained how the formula calculated financing according to outcomes similar among types of institutions. For example, “two sets of outcomes were identified—those for four-year universities and those for two-year community colleges—that best reflected the purposes of each institution” (THEC, 2010, Introduction section, para. 4). The formula was also based upon retention and graduation rates at the institutions (THEC, 2010).

Since Tennessee HOPE Scholarship retention impacts student enrollment, increasing the percentage of students who remain eligible for the scholarship at attempted credit hour benchmarks can also potentially impact a school’s funding formula. If the funding formula was positively affected, the institution could receive additional state funding, which could increase institutional success and lead to the realization of the school’s mission. THEC (2010) concluded that the outcomes based funding formula was “productivity based and provide[d] more stability by spreading the financial incentives across more variables . . . , but [did] not have annual targets or benchmarks [. . . , and did]

not punish institutions for failure to achieve predetermined goal[s]” (Conclusion section, para. 1).

Differences in Student Attitudes

There are administrators who believe a simple email is sufficient correspondence when communicating important information to students. They assume these individuals will actually read the correspondences sent. Truthfully, the freshmen students currently enrolling in school are not as familiar with responsibility as previous generations (Turner & Thompson, 2014). Therefore, it may take additional time for these freshmen to acclimate to life at college and begin taking responsibility for their success. Now there are those who would argue against this postulation and expect those teenagers who have just recently graduated from high school, a place where they were coddled and every aspect of their day was predetermine by an authority figure, to become adults.

Current higher education staff, leaders, and educators must be cognizant of differences between past generations of students and the current generation of students being admitted. A study completed by Turner and Thompson (2014) explained that, according to Monaco and Marti (2007), “although millennial students faced some of the same developmental and transitional challenges as past generations, their learning styles, educational expectations, and socialization characteristics challenge the traditional programs, services, and instructional strategies offered by many colleges” (Background section, para. 3). If leaders expect to communicate effectively with these individuals, they must be willing to modify their methods.

The study also discussed that “millennial students possess[ed] an impractical confidence about their academic skills that often [made them] unaware of their true academic capabilities” (Turner & Thompson, 2014, Background section, para. 5). This is significant, because these students may have been increasingly reluctant to request assistance if they believed they were more capable of succeeding on their own than they truly were. For financial aid employees and several other staff and faculty, this means they could need to prompt a student to seek assistance from a particular office or offer their own support. They cannot afford to set back and wait for the student to contact them. When reviewing past Tennessee HOPE Scholarship practices, it becomes more evident, in light of this research, that sending newsletters or emails with information may not be as effective as face-to-face communication. This information is important, because it can help direct the development of more beneficial communication methods.

College Access Versus Retention

There may be numerous studies researching the benefits of greater college access for underrepresented populations. Yet, no matter how vital having access to higher education is for all types of students, these individuals must also remain enrolled in order to graduate. Still, simply registering for college courses is not beneficial unless people actually graduate and utilize the knowledge they have obtained. An article by Donald Heller (2002) reviewed the Georgia merit based HOPE scholarship and determined it did not effectively promote college access, because the award was given to students who would have probably enrolled in college no matter what aid they received to assist with

costs. Unlike the Georgia HOPE Scholarship, the Tennessee HOPE Scholarship, is comprised of both merit and need-based awards.

Since “2003, [when] Tennessee joined the list of states that use[d] the lottery as a source of revenue for education” (Menifield, 2012, p. 4), debates have arisen related to the longevity of the program and its viability as a means for students to achieve degree completion. Menifield (2012) sought to answer this question by studying various sources of Tennessee HOPE Scholarship retention data. The purpose of the study “was to determine what factors affect[ed] scholarship retention/disposition in Tennessee’s colleges and universities at the four levels of matriculation” (Menifield, 2012, p. 14).

This is an important issue, because it is widely understood that certain groups of students retain the scholarship at higher rates than others. A large number of students were used in this study. Specifically, “the original data set contained 65,536 students. However, after removing the students with missing values, the final data set contained 33,228 cases” (Menifield, 2012, p. 9). This is a rather large group considering that some institutions award between 3,000 and 4,000 students during a regular academic year. The actual data sets were “collected by the Tennessee Higher Education Commission” (Menifield, 2012, p. 9).

The students did not actually participate in the study, because questionnaires were not distributed, and they were not contacted directly; scholarship retention data were only reviewed (Menifield, 2012). Reviewing retention data is satisfactory. However, Menifield may have benefited from surveying a portion of the students who continued to enroll and those who withdrew. This may have helped the researcher discover commonalities

between or within the groups. Menifield (2012) used scholarship retention/disposition as the dependent variable and independent variables coinciding with previous research, such as race, gender, county type, Pell grant eligibility, adjusted gross income, high school GPA, undergraduate GPA, and major. These variables are considered, among scholarship coordinators, to have the most significant effect on Tennessee HOPE Scholarship retention. In regards to the current study being conducted, Menifield's dependent variables correspond to the ones used. These variables allow a researcher to identify trends in educational attainment but also compare gender, race, and other socioeconomic factors to determine if statistically significant differences exist between certain groups' academic achievement.

The results of the study surprised the researcher (Menifield, 2012). However, a seasoned scholarship coordinator may not have been as stunned. First, the researcher discovered that "African Americans [were] the most likely to lose their scholarship eligibility than any other racial group at every level" (Menifield, 2012, p. 10). Many higher education leaders are cognizant of this unfortunate statistic, and it has been an issue for a number of years. Menifield (2012) also found "students from higher income families [were] more likely to retain their scholarships than students from lower income families" (p. 10). The main conclusion was that the results "afford[ed] the researcher an opportunity to create a best and worst case scenario for a scholarship student [, and this could....] provide bureaucrats ... the opportunity to focus resources on specific populations" (Menifield, 2012, p. 14).

Gaps in the Literature

The current study seeks to both identify the most at-risk population of students for losing TELS eligibility at Austin Peay State University, determined by reviewing academic achievement according to initial TELS eligibility determinants, gender, employment status, and housing status, and determine if differences in high school achievement were statistically significant between categories with differences deemed statistically significant. Therefore, the study goes a step further than Menifield's research to not only identify academic issues in college, relative to various socio-economic groups, but to determine if statistically significant differences in student achievement were also prevalent during high school.

Previous research has studied the effectiveness of the Tennessee HOPE Scholarship as a program that promotes enrollment of students who would otherwise have not attempted to earn a post-secondary education. Other studies have detailed data pertaining to scholarship retention and how the award impacts various groups of students. Research pertaining to scholarship losses has led to the Tennessee legislature amending initial and continuing eligibility requirements in order to boost retention or permit easier regain of funding. Yet, this research should also be utilized to develop proactive programs to help students maintain scholarship entitlement no matter the eligibility requirements. The best option is not always removing challenges for students; students may benefit more from programs that help them overcome the challenges set before them. This study strives to research not only why students lose eligibility for the TELS but also if issues arose during the transition to college enrollment. If higher education

administrators become cognizant of variances in academic achievement between a student's senior year of high school and freshman year of college and what factors attributed to those variances, they could be more prone to develop proactive retention programs.

Although studies completed by the THEC have provided information to institutional administrators who desire to understand which student populations are more at-risk of not retaining their scholarships, the research has not effectively supplied institutions with evaluations of multiple factors related to eligibility groups. The goal of this study is to discover if statistically significant differences in TELS recipients' academic achievement are observable in high school settings or problems related to periods of transition to college environments.

Regarding the students' academic achievement during the first year at APSU, the variables GPA, ACT score, gender, employment status, and housing status were collected from the university's Office of the Registrar. The students were not approached to participate in the study. Although information related to gender, employment status, and housing status were included in the study, the at-risk group was determined based upon these variables but rather academic achievement in high school and college.

In this study, TELS eligibility categories were chosen as an indicator of at-risk status. The eligibility categories included Tennessee HOPE Scholarship, Pell Grant, and TAMS eligibility. Use of these determinants is imperative,

CHAPTER III

METHODOLOGY

Participants

This study was separated into two parts. However, the same sample of students was used for both sections. The sample included records for 5,339 first-time freshmen Hope scholarship recipients from the academic years 2010-2011 through 2014-2015 at APSU. All participants were traditional age students who graduated from Tennessee high schools. Sixty-two percent of the students studied were females. Forty-six percent were employed. Fifty-five percent of the students resided in on-campus housing. All subjects assigned to an academic year were first-time freshmen specifically identified according to that aid year and were not duplicated within the sample.

Data regarding the students' academic achievement during the first year at APSU, final high school GPA, ACT score, gender, employment status, and housing status were collected from the university's Office of the Registrar. The students were not approached to personally participate in the study. Although information related to gender, employment status, and housing status were included in the study, the at-risk group was not merely selected based upon these variables but rather academic achievement in relation to those variables.

Instrumentation

For this particular study, TELS eligibility categories were chosen as an independent variable. The eligibility categories included Tennessee HOPE Scholarship, Lottery Aspire Award, and GAMS eligibility. Use of these determinants is imperative,

because the types can help categorize students according to prior academic achievement and/or financial background. For example, the supplemental Aspire Award requires household income to remain at or below \$36,000 annually. A student eligible for only the Tennessee HOPE Scholarship or GAMS would not have a household income level at or below \$36,000. The GAMS is awarded to students who have earned a minimum final high school GPA of 3.75 and a minimum cumulative ACT score of 29. This group of individuals has a higher level of academic achievement.

In addition, the first part of the study included TELS GPA at the first 24 attempted credit hours as the dependent variable. In an attempt to not omit factors that could affect the outcome of the study, students were categorized according to gender, and the category was included as an independent variable. In order to determine how employment affects a student's academic achievement, employment status was utilized as an independent variable. For this variable, students were identified as either employed or not employed. Housing status is also an important factor in this study, because student achievement can be impacted according to whether a student commutes to campus or lives on campus within walking distance of facilities. Therefore, housing status was included in the study as an independent variable. Ultimately, all these variables were included due to the ability of each to have a profound impact on student academic achievement and persistence towards obtaining a college degree.

As previously stated, the information provided by the Office of the Registrar did not include identifying information, and the Excel documents utilized codes to categorize the included students. Award types included indicators of Aspire and GAMS for those

two categories. If the award type field was blank, the lack of coding indicated the student was HOPE only. Variables of housing and employment statuses were recorded as simply a “Y” for yes or “N” for no. For example, if a student was a campus resident, the data would reflect a “Y” under the housing category. Gender was recorded as either “M” for male or “F” for female.

Once the first part of the study resulted in the selection of the categories deemed statistically significant, the variables were selected for the high school achievement portion. Employment status, award type, and academic year were selected as the independent variables. This was done due to the statistically significant differences observed between employed and unemployed students in relation to average TELS GPA, award types, and academic years. Final high school GPA and ACT scores were selected as dependent variables. ACT scores were deemed an appropriate dependent variable due to standardization. Final high school GPA was used to determine if statistically significant differences existed between the groups of students when considering their high school academic achievement.

Procedure

For the section of the study aimed at identifying the at-risk population of Hope scholarship recipients at APSU who would likely most benefit from a retention program, 24 attempted credit hour benchmark TELS GPAs, gender, employment, and housing data were requested from the university’s Office of the Registrar during summer 2015. The requested data pertained only to the participants included in the study. The information

was obtained without any identifying information. Records detailing the information were used without student names or Banner identifications.

The information was organized according to eligibility types of Hope only, Aspire, and GAMS eligibility. The college GPA earned at the 24 attempted credit hours benchmark was used to calculate an average GPA for each group. The category earning the lowest average GPA was considered to be at the highest-risk of losing TELS eligibility. To reduce the likelihood for experimental confounds to adversely affect the results, extra attention was given to ensuring all possible variables explaining success or failures in each instance were examined. Therefore, employment statuses, genders, and housing statuses were reviewed for the group to ensure these factors were not statistically different between groups. When the information was loaded into SPSS, Aspire became a "1", GAMS was loaded as "2", and HOPE only recipients were coded as "3". Males were assigned a "4" and females a "5" to identify gender. Employed individuals were coded as "6" and unemployed students were marked as a "7". The number "8" signified living on campus, and a "9" was considered off campus. Academic years 2010-2011, 2011-2012, 2012-2013, 2013-2014, and 2014-2015 were coded as "1-5," respectively.

During the second part of the study, TELS GPA was no longer utilized as the dependent variable. Final high school GPA was used during the first test, and ACT score was used for the second test. The variables of employment status, academic year, and award type were included in the sample using the same identifiers as mentioned previously.

Statistical Analysis

Once the data were collected, a factorial ANOVA was conducted to compare the means of the three Lottery scholarship eligibility types as well as gender, and employment and housing statuses, on GPAs achieved at the 24 attempted credit hours benchmark. This test is designed to not only compare the main effects with one another but also all interactions between the variables. The test is also capable of more accurately calculating results when using multiple independent variables. Several assumptions were violated when completing the ANOVA, and the process used in this instance is explained in detail within the results section of the study. Two factorial ANOVAs were conducted to compare means for final high school GPA and ACT scores for the students included in the initial study. These tests were chosen for the same reasons mentioned during the former test procedure. In addition, partial eta squared (η_p^2) was calculated as:

$$\eta_p^2 = \frac{df_{effect} \times F_{effect}}{(df_{effect} \times F_{effect}) + df_{error}}$$

in order to determine effect size (Fritz, Morris, & Richler, 2012). η_p^2 estimates were defined as either small ($\eta_p^2 \leq .03$), medium ($.03 < \eta_p^2 \leq .06$), or large ($\eta_p^2 > .06$), as suggested by Cohen (1988).

CHAPTER IV

RESULTS

A factorial ANOVA was selected as the primary testing method for the first portion of the field study for two reasons. First, completing multiple one-way ANOVA's when one factorial ANOVA could be ran is similar to utilizing multiple *t*-tests when a researcher could complete a one-way ANOVA. To do so could increase the likelihood of a Type I error occurring (Verma, 2012). A Type I error results in a true null hypothesis being erroneously rejected leading to the researcher assuming the presence of an effect when it does not exist.

The second reason a factorial ANOVA was used related to the data being studied. The particular study required the review of multiple variables and any interactions they shared. A factorial ANOVA "enables both main and interaction effects to be tested" (Kerr, Hall, & Kozub, 2003, p. 140). For example, the data included information related to employment, housing status, and TELS award types. Although all these factors impact a student's GPA, there may be statistically significant associations between the independent variables based on the dependent variable of college GPA as well. The factorial ANOVA serves as a method for straightforwardly determining if these associations exist.

Lottery scholarship eligible students can be categorized into two groups according to the determinants of their initial eligibility. For each initial Lottery scholarship eligibility group, all eligible enrolled first-time freshmen at Austin Peay State University from academic years 2010-2011 through 2014-2015 were selected. The sample consisted

of 5,339 students. Each student had an earned cumulative GPA during the initial freshman academic year. TELS GPA was used as the dependent variable and academic year, award type, employment, gender, and housing status were included as independent variables.

Assumptions for College TELS GPA

For the first section of the study, the observations were independent between the samples. Individuals were grouped according to their initial Lottery scholarship eligibility information, housing and employment statuses, gender, and initial year of scholarship eligibility with an award. A student could only receive Aspire and HOPE, Merit and HOPE, or HOPE only and could not belong to more than one group.

The assumption of normality was tested by examining the unstandardized residuals. The Kolmogorov-Smirnov test for normality was used due to the large size of the sample. Review of the Kolmogorov-Smirnov test (Aspire: $KS = .108$, $df = 1993$, $p < .001$ and HOPE Only: $KS = .124$, $df = 3178$, $p = < .001$) and skewness (Aspire: $-.644$ and HOPE Only: $-.984$) and kurtosis (Aspire: $-.733$ and HOPE Only: $-.034$) for the dependent variable of TELS GPA indicated normality could not be assumed. Q-Q plots and histograms also suggested the assumption of normality was unreasonable. Figures 1-2 depict the Q-Q plots and histograms used in the analysis of normality.

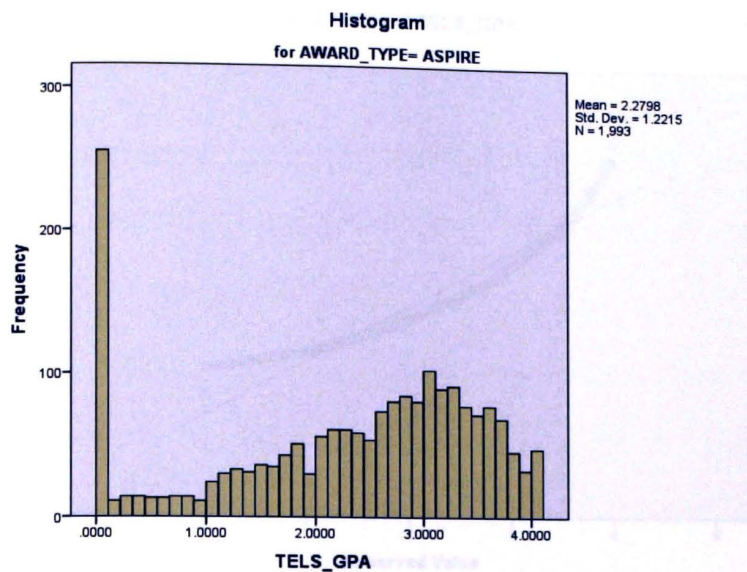


Figure 1. Aspire Histogram.

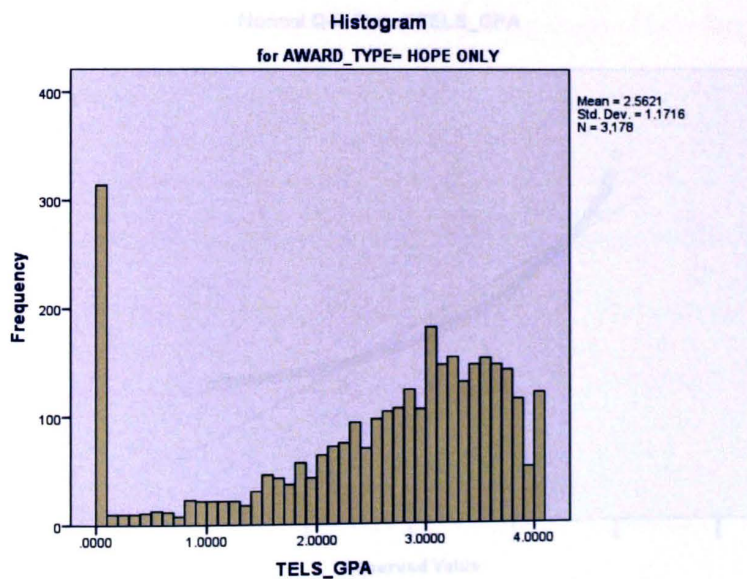


Figure 2. HOPE Only Histogram.

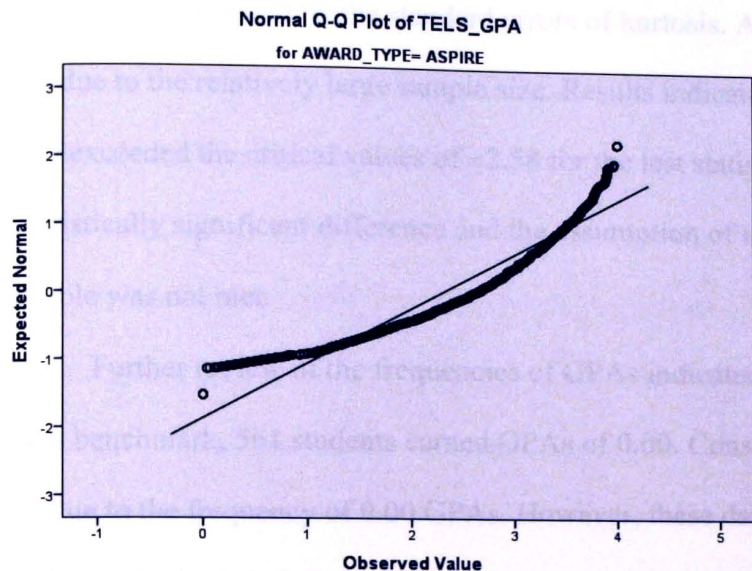


Figure 3. Aspire Q-Q Plot.

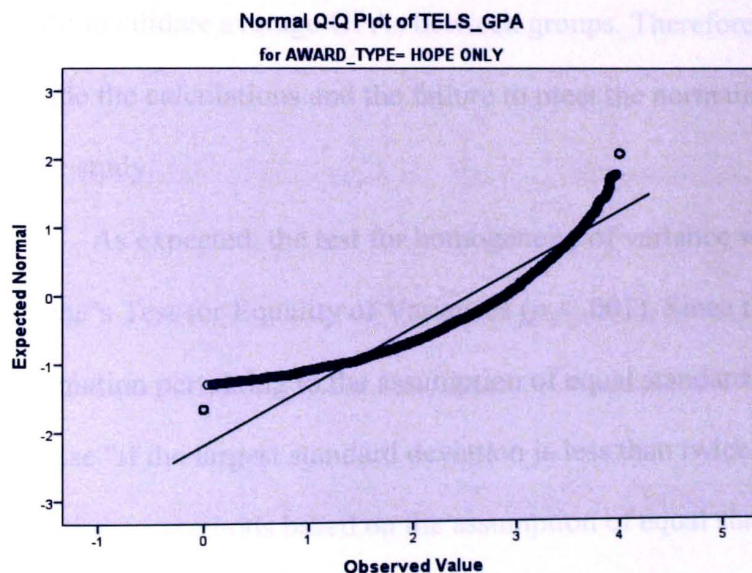


Figure 4. HOPE Only Q-Q Plot.

The results indicated potential problems with negative kurtosis. Platykurtic data can reduce the power of the F -test. Therefore, the degree of kurtosis was examined using

kurtosis values divided by the standard errors of kurtosis. An alpha = .01 was used for the tests due to the relatively large sample size. Results indicated the degree of kurtosis ($z = -5.46$) exceeded the critical values of ± 2.58 for the test statistic, thereby further indicating a statistically significant difference and the assumption of normality in the dependent variable was not met.

Further review of the frequencies of GPAs indicated, at the 24 attempted credit hours benchmark, 561 students earned GPAs of 0.00. Consequently, normality was not met due to the frequency of 0.00 GPAs. However, these data were relevant to the study and had to be included. Students' levels of academic achievement were being measured, and a 0.00 GPA represented a level of attainment. Removing the GPAs from the data would invalidate average GPAs between groups. Therefore, the decision was made to include the calculations and the failure to meet the normality assumption as a limitation of the study.

As expected, the test for homogeneity of variance was violated as assessed by Levene's Test for Equality of Variances ($p < .001$). Since this assumption was not met, information pertaining to the assumption of equal standard deviations was analyzed, because "if the largest standard deviation is less than twice the smallest standard deviation ... methods based on the assumption of equal standard deviations [can be used] and ... results will still be approximately correct" (Moore, McCabe & Craig, 2009, p. 646). The smallest standard deviation ($SD = .776$) was among HOPE only recipients employed and living on campus during 2012-2013. The largest standard deviation ($SD = 1.482$) was observed within the group of students awarded Aspire who were not

employed and lived off-campus during 2013-2014. Since the largest standard deviation was not more than twice the smallest standard deviation, the assumption of equal standard deviations was met (Moore et al., 2009).

Results for College TELS GPA

A five-way ANOVA was initially conducted using TELS GPA as the dependent variable and academic year, award type, employment, gender, and housing status as the independent variables. The test for homogeneity of variance was violated as assessed by Levene's Test for Equality of Variances ($p < .001$). When the assumption of homogeneity is not met according to a Levene's test, a researcher may determine "[i]f the largest standard deviation is less than twice the smallest standard deviation, ... [and if so, the researcher] can use methods based on the assumption of equal standard deviations [to assume] ... results ... [are] approximately correct" (Moore et al., 2009, p. 646). The smallest standard deviation ($SD = .042$) was among female GAMS recipients who were not employed and lived off campus during 2014-2015. The largest standard deviation ($SD = 1.928$) was observed within the same group. Since 1.928 is more than twice the standard deviation of .042, the assumption of equal standard deviations was not satisfied. In addition, standard deviations were not computed for several groups when including gender as an independent variable.

Both extreme standard deviations were within a group of students awarded GAMS. Due to this outcome, the independent variable of award type was reviewed. The sample contained 1,993 Aspire, 168 GAMS, and 3,178 HOPE Only students (Aspire: $M = 2.27$, $SD = 1.22$; GAMS: $M = 3.52$, $SD = .765$; HOPE Only: $M = 2.56$, $SD = 1.17$). Due

to these figures, the decision was made to remove the sample of GAMS students from the independent variable of award type included in the original analysis. Figures pertaining to gender were also excluded from the test data in order to calculate standard deviations for all groups.

A subsequent four-way (5x2x2x2) ANOVA was conducted to evaluate the effects of academic years, TELS award types, housing statuses, and employment statuses on one another in relation to the dependent variable. The four independent variables in this study were academic year, TELS award type, housing status, and employment status. Final TELS GPA at the 24 attempted credit hours benchmark served as the dependent variable, with higher GPAs indicating higher levels of academic achievement. The results of the factorial ANOVA are shown in Table 1.

Table 1

Factorial ANOVA Results

<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η_p^2
Corrected Model	496.58	39	12.733	9.422	< .001	.067
Intercept	26475.042	1	26475.042	19590.913	< .001	.792
Award (A)	42.516	1	42.516	31.261	< .001*	.006
Employment (E)	301.174	1	301.174	222.862	< .001*	.042
Housing (H)	18.036	1	18.036	13.346	< .001*	.003
Academic Year (Y)	4.755	4	1.189	.880	.475	.001
A x E	1.102	1	1.102	.815	.367	< .001

A x H	4.333	1	4.333	3.207	.073	.001
A x Y	1.094	4	.273	.202	.937	< .001
E x H	1.752	1	1.752	1.296	.255	< .001
E x Y	.194	4	.049	.036	.998	< .001
H x Y	12.370	4	3.092	2.288	.058	.002
A x E x H	.001	1	.001	< .001	.983	< .001
A x E x Y	8.512	4	2.128	1.575	.178	.001
A x H x Y	4.014	4	1.003	.742	.563	.001
E x H x Y	.328	4	.082	.061	.993	< .001
A x E x H x Y	5.427	4	1.357	1.004	.404	.001
Error	6934.003	5131	1.351			
Total	38554.141	5171				
Corrected Total	7430.585	5170				

* $p < .05$

Interaction effects were examined prior to main effects, and the interactions between variables were not considered statistically significant. According to the results, there were statistically significant differences in the means of award types on grade point averages achieved for the two conditions of Aspire and HOPE, $F(1) = 31.461, p < .05$, employment statuses of employed and not employed, $F(1) = 222.862, p < .05$, and housing statuses of on campus and off campus, $F(1) = 13.346, p < .05$. η_p^2 estimates of .006, .042, and .003 were observed, respectively, indicating small effect sizes for award

types and housing status and a medium effect size for employment status. The remaining predicted interactions were not statistically significant.

Because statistically significant results were found, the means and standard deviations of the groups were examined. Post hoc tests were not conducted due to each of the statistically significant independent variables having only two levels. Table 2 illustrates the means and standard deviations for the GPA measure as a function of the four independent factors.

Table 2

Means and Standard Deviations of Final TELS GPAs

		2010-11	2011-12	2012-13	2013-14	2014-15
		<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Aspire:	Employed					
	On Campus:	2.53 (.95)	2.51 (.95)	2.44 (.97)	2.71 (.95)	2.83 (1.07)
	Off Campus:	2.64 (.95)	2.45 (1.23)	2.71 (.88)	2.67 (1.00)	2.43 (1.24)
	Unemployed					
	On Campus:	2.22 (1.20)	2.15 (1.28)	2.09 (1.23)	2.13 (1.17)	2.18 (1.35)
	Off Campus:	2.07 (1.34)	2.13 (1.31)	2.08 (1.31)	2.06 (1.48)	1.92 (1.38)
HOPE Only:	Employed					
	On Campus:	2.89 (.88)	2.86 (.81)	2.93 (.78)	2.84 (.91)	2.95 (.93)
	Off Campus:	2.71 (.92)	2.84 (.89)	2.64 (.84)	2.81 (.88)	2.71 (1.10)
	Unemployed					

On Campus:	2.30 (1.32)	2.25 (1.35)	2.33 (1.32)	2.48 (1.24)	2.53 (1.30)
Off Campus:	2.12 (1.37)	2.08 (1.46)	2.18 (1.40)	2.30 (1.36)	2.09 (1.43)

From these data, it was determined that Aspire students, on average, did not perform as well as HOPE only recipients no matter their housing or employment statuses. The only instances this was not true were for Aspire students living off campus and not employed ($M = 2.13$, $SD = 1.31$) and HOPE only students in the same category ($M = 2.08$, $SD = 1.46$) during 2011-2012 and Aspire students living off campus and employed ($M = 2.71$, $SD = .88$) and HOPE only students in the same category ($M = 2.64$, $SD = .84$) during 2012-2013. Noticeable differences were examined between students living on campus and those living off campus. For most academic years, students living on campus achieved higher 24 attempted credit hours benchmark TELS GPAs. However, this was not the case for Aspire students employed and living off campus ($M = 2.64$, $SD = .95$) compared to those living on campus ($M = 2.53$, $SD = .95$) during 2010-2011 and employed Aspire students living off campus ($M = 2.71$, $SD = .88$) and those living on campus ($M = 2.44$, $SD = .97$) during 2012-2013. Employed students earned higher TELS GPAs than unemployed students in every category. Since the effect size (η_p^2) was estimated at .042 for employment status, a medium effect, this implied that 4.2% of the variance in the dependent variable was attributable to the difference in employment status. These examples demonstrated the statistically significant differences in award types, housing statuses, and employment statuses.

During the second part of the study, factorial ANOVAs were completed to compare means for final high school GPA and ACT scores for the students included in

the initial study. A factorial ANOVA was selected for the same reasons discussed earlier for the initial portion of the study. Students from academic years 2010-2011 through 2014-2015, used in the first section of the study, were selected. The sample consisted of 5,339 students. Final high school GPA was used as the dependent variable and academic year and employment status were used as the independent variables in the first ANOVA. ACT score was used as the dependent variable and academic year and employment status were used as the independent variables in the second ANOVA. Employment status was selected as an independent variable due to its medium observed effect size during the initial factorial ANOVA using college TELS GPA as the dependent variable.

Assumptions for High School Achievement Study

The observations were independent between the samples for the second part of the study. Individuals were grouped according to their initial Lottery scholarship eligibility information, employment status, and initial year of scholarship eligibility with an award. A student could only receive Aspire and HOPE or HOPE only and could not belong to more than one group.

The assumption of normality was tested by examining the unstandardized residuals. The Kolmogorov-Smirnov test for normality was used due to the large size of the sample. Review of the Kolmogorov-Smirnov test (Aspire: $KS = .065$, $df = 1960$, $p < .001$, HOPE only: $KS = .065$, $df = 3141$, $p < .001$), and skewness (Aspire: $-.658$, HOPE only: $-.734$) and kurtosis (Aspire: $.526$, HOPE only: $.540$) for the dependent variable of final high school GPA indicated normality could not be assumed. Additionally, the Kolmogorov-Smirnov test (Aspire: $KS = .106$, $df = 1960$, $p < .001$, and HOPE only: $KS =$

.105, $df = 3141$, $p < .001$), and skewness (Aspire: .465, and HOPE only: .321) and kurtosis (Aspire: .164, and HOPE only: .044) for the dependent variable of ACT score indicated normality could not be assumed. Q-Q plots and histograms also suggested the assumption of normality was unreasonable for Aspire and HOPE only groups when reviewing high school GPA. However, the histograms and Q-Q plots for the Aspire and HOPE only with ACT scores demonstrated a fairly normal curve. Figures 5-12 depict the Q-Q plots and histograms used in the analysis of normality.

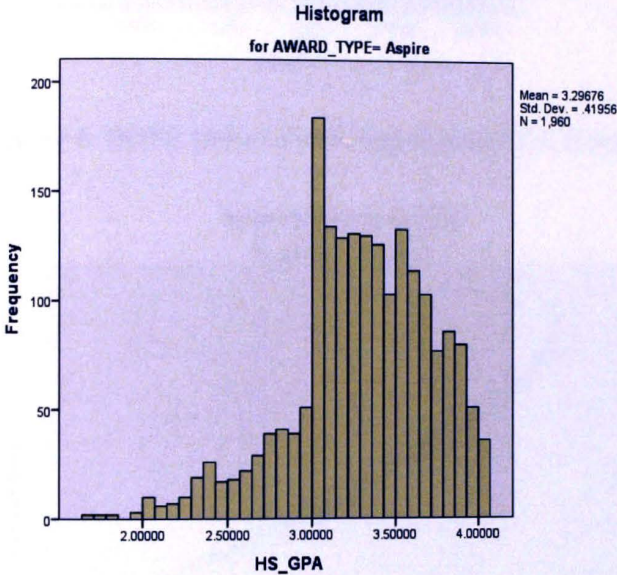


Figure 5. Aspire—Final High School GPA Histogram.

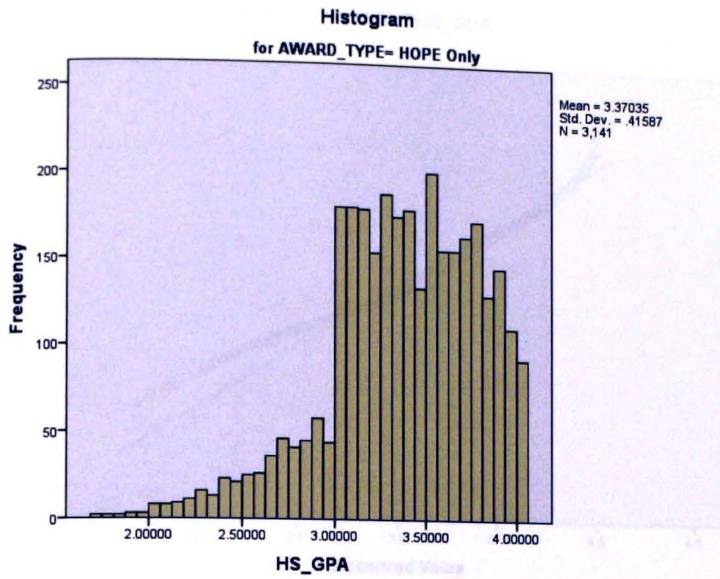


Figure 6. HOPE Only—Final High School GPA Histogram.

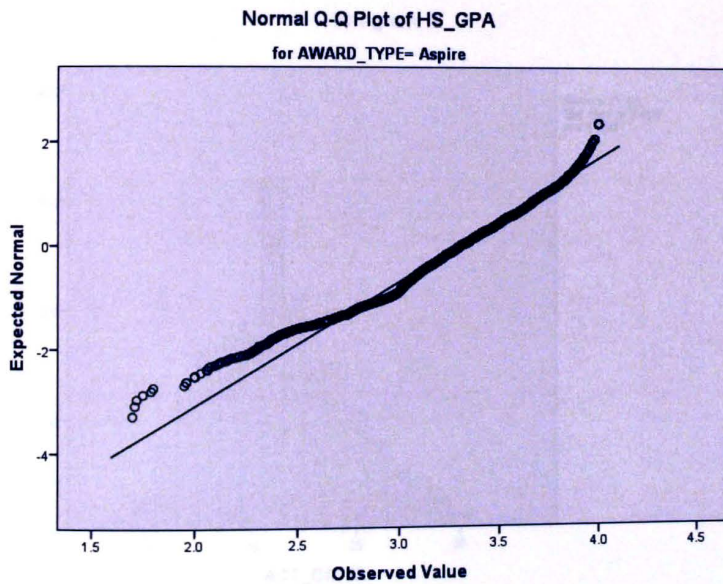


Figure 7. Aspire—Final High School GPA Q-Q Plot.

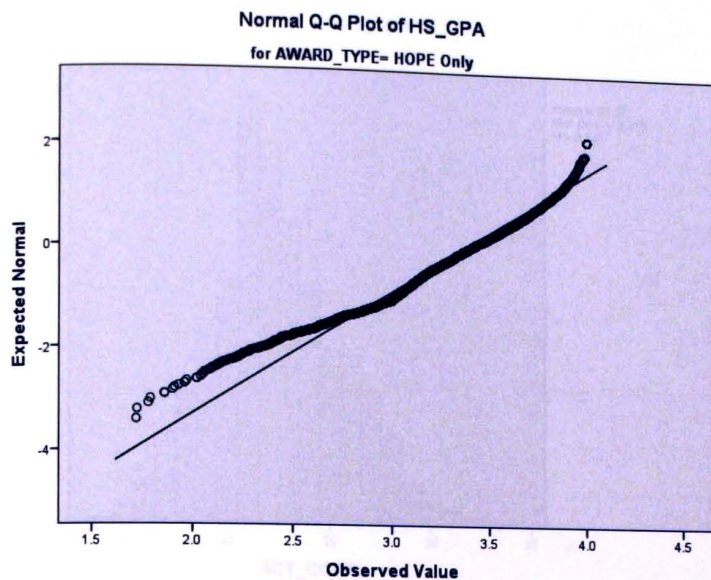


Figure 8. HOPE Only—Final High School GPA Q-Q Plot.

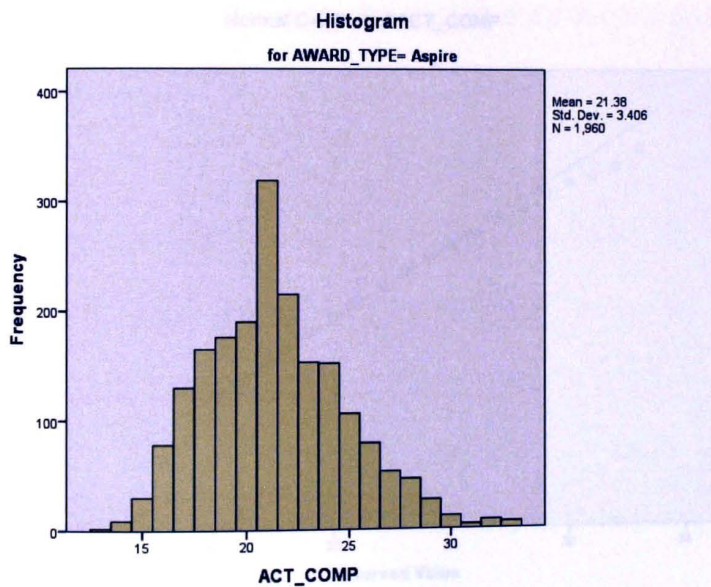


Figure 9. Aspire—ACT Score Histogram.

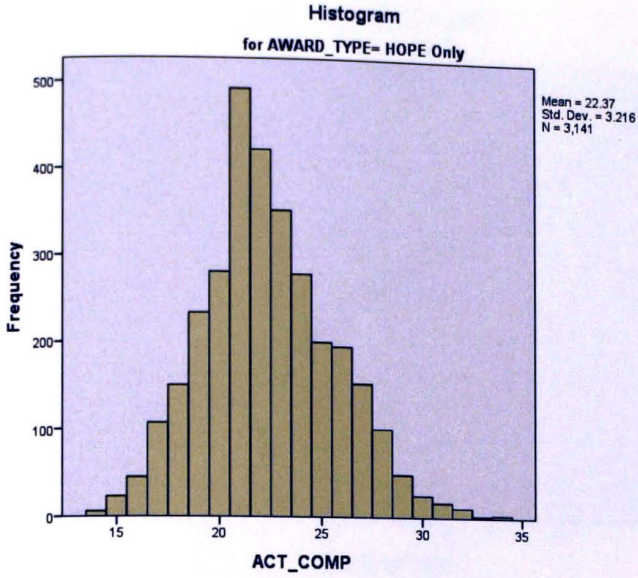


Figure 10. HOPE Only—ACT Score Histogram.

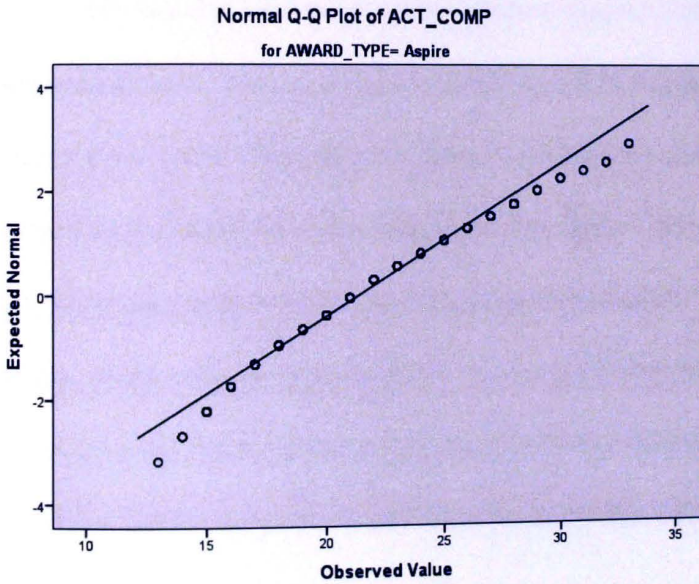


Figure 11. Aspire—ACT Score Q-Q Plot.

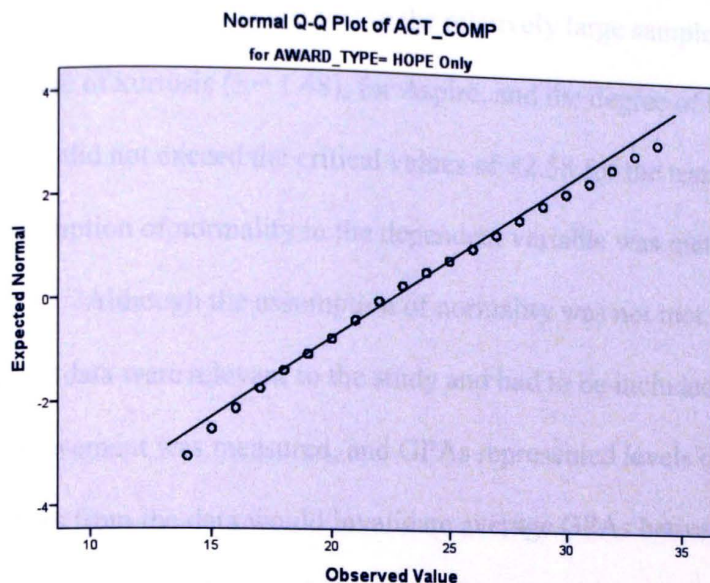


Figure 12. HOPE Only—ACT Score Q-Q Plot.

The results indicated potential positive kurtosis problems with Aspire and HOPE only recipients in relation to final high school GPA. Leptokurtic data can reduce the power of the F -test. Therefore, the degree of kurtosis was examined using kurtosis values divided by the standard errors of kurtosis. An $\alpha = .01$ was used for the tests due to the relatively large sample size. Results indicated the degree of kurtosis ($z = 4.74$), for Aspire, and the degree of kurtosis ($z = 6.21$), for HOPE only, both exceeded the critical values of ± 2.58 for the test statistic, thereby further indicating a statistically significant difference and the assumption of normality in the dependent variable of final high school GPA was not met.

The results also indicated potential positive kurtosis problems with Aspire and HOPE only recipients in relation to ACT scores. Therefore, the degree of kurtosis was examined using kurtosis values divided by the standard errors of kurtosis. An $\alpha = .01$

was also used for this test due to the relatively large sample size. Results indicated the degree of kurtosis ($z = 1.48$), for Aspire, and the degree of kurtosis ($z = .51$), for HOPE only, did not exceed the critical values of ± 2.58 for the test statistic. Therefore, the assumption of normality in the dependent variable was met.

Although the assumption of normality was not met for final high school GPAs, these data were relevant to the study and had to be included. Students' levels of academic achievement was measured, and GPAs represented levels of attainment. Removing the GPAs from the data would invalidate average GPAs between groups. Therefore, the decision was made to include the calculations and the failure to meet the normality assumption as a limitation of the study.

As expected, the test for homogeneity of variance was violated as assessed by Levene's Test for Equality of Variances ($p = .009$) when reviewing final high school GPA. Since this assumption was not met, information pertaining to the assumption of equal standard deviations was analyzed. The smallest standard deviation ($SD = .361$) was among HOPE only recipients employed during 2014-2015. The largest standard deviation ($SD = .458$) was observed within the group of students awarded Aspire who were not employed during 2010-2011. Since the largest standard deviation was not more than twice the smallest standard deviation, the assumption of equal standard deviations was met (Moore et al., 2009).

The test for homogeneity of variance was also violated as assessed by Levene's Test for Equality of Variances ($p = .038$) when reviewing ACT scores. Since this assumption was not met, information pertaining to the assumption of equal standard

deviations was analyzed for this group as well. The smallest standard deviation ($SD = 2.827$) was among HOPE only recipients employed during 2011-2012. The largest standard deviation ($SD = 3.646$) was observed within the group of students awarded Aspire who were not employed during 2012-2013. Since the largest standard deviation was not more than twice the smallest standard deviation, the assumption of equal standard deviations was met (Moore et al., 2009).

Results for High School Achievement

Final high school GPA. A three-way ($5 \times 2 \times 2$) ANOVA was conducted to evaluate the effects of academic years, TELS award types, and employment statuses on one another in relation to final high school GPA. The three independent variables in this study were academic year, TELS award type, and employment status. Final high school GPA served as the dependent variable, with higher GPAs indicating higher levels of academic achievement. The results of the factorial ANOVA are shown in Table 3.

Table 3

Factorial ANOVA Results—Final High School GPA

Source	SS	df	MS	F	p	η_p^2
Corrected Model	20.366	19	1.072	6.231	< .001	.023
Intercept	49961.963	1	49961.963	290430.699	< .001	.983
Award (A)	4.114	1	4.114	23.915	< .001*	.005
Employment (E)	7.799	1	7.799	45.338	< .001*	.009

Academic Year (Y)	2.579	4	.645	3.749	.005*	.003
A x E	.207	1	.207	1.205	.272	< .001
A x Y	.208	4	.052	.302	.677	< .001
E x Y	.848	4	.212	1.232	.295	.001
A x E x Y	.330	4	.082	.479	.751	< .001
Error	874.070	5081	.172			
Total	57869.893	5101				
Corrected Total	894.436	5100				

* $p < .05$

Interaction effects were examined prior to main effects, and the interactions between variables were not considered statistically significant. According to the results, there were statistically significant differences in the means of award types on final high school GPAs achieved for the two conditions of Aspire and HOPE only, $F(1) = 23.915$, $p < .05$, employment statuses of employed and not employed, $F(1) = 45.338$, $p < .05$, and award years of 2010-2011, 2011-2012, 2012-2013, 2013-2014, and 2014-2015, $F(1) = 3.749$, $p < .05$. η_p^2 estimates of .005, .009, and .003 were observed, respectively, indicating small effect sizes for all statistically significant categories. The remaining predicted interactions were not statistically significant.

Because statistically significant results were found, the means and standard deviations of the groups were examined. Post hoc tests were not conducted for award types or employment statuses due to each of the statistically significant independent

variables having only two levels. Table 4 illustrates the means and standard deviations for the GPA measure as a function of those two independent factors.

Table 4

Means and Standard Deviations of Final High School GPAs

		2010-11	2011-12	2012-13	2013-14	2014-15
		<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Aspire:	Employed	3.27 (.44)	3.35 (.36)	3.32 (.44)	3.37 (.38)	3.40 (.37)
	Unemployed	3.24 (.46)	3.28 (.44)	3.29 (.41)	3.25 (.42)	3.30 (.42)
HOPE Only:	Employed	3.39 (.40)	3.41 (.40)	3.39 (.40)	3.41 (.39)	3.48 (.36)
	Unemployed	3.30 (.42)	3.31 (.45)	3.33 (.44)	3.32 (.44)	3.33 (.44)

From these data, it was determined that Aspire students, on average, did not perform as well as HOPE only recipients no matter their employment statuses. η_p^2 was estimated at .005 for award type and categorized as a small effect. Employed students earned higher final high school GPAs than unemployed students in every category. Since η_p^2 was estimated at .009 for employment status, a small effect, this implied that only .9% of the variance in the dependent variable was attributable to the difference in employment status. These examples demonstrate the statistically significant differences in award types and employment statuses.

Statistically significant results were also found for achievement levels between academic years. This independent variable had five levels. Because a statistically significant result was determined, and there were five levels to the independent variable,

a post hoc test was conducted. The post hoc Tukey HSD test was selected. This test is designed to compare each of the academic years to each other. The test compared the 2010-2011, 2011-2012, 2012-2013, 2013-2014, and 2014-2015 years. Table 5 includes the results of the post hoc Tukey HSD test.

Table 5

Tukey HSD Test Results for Final High School GPA Academic Years

(I) Academic Year	(J) Academic Year	Mean Difference (I-J)	Std. Error	p	95% Confidence Interval	
					Lower Bound	Upper Bound
2010-2011	2011-2012	-.029	.018	.511	-.079	.021
	2012-2013	-.024	.019	.702	-.074	.027
	2013-2014	-.031	.018	.416	-.081	.018
	2014-2015	-.072	.018	.001*	-.123	-.022
2011-2012	2010-2011	.029	.018	.511	-.021	.079
	2012-2013	.005	.019	.999	-.045	.056
	2013-2014	-.002	.018	1.000	-.052	.047
	2014-2015	-.043	.018	.130	-.094	.007
2012-2013	2010-2011	.024	.019	.702	-.027	.074
	2011-2012	-.005	.019	.999	-.056	.045
	2013-2014	-.008	.018	.994	-.058	.042
	2014-2015	-.049	.019	.067	-.100	.002

2013-2014	2010-2011	.031	.018	.416	-.018	.081
	2011-2012	.002	.018	1.000	-.047	.052
	2012-2013	.008	.018	.994	-.042	.058
	2014-2015	-.041	.018	.162	-.091	.009
2014-2015	2010-2011	.072	.018	.001*	.022	.122
	2011-2012	.043	.018	.130	-.007	.094
	2012-2013	.049	.019	.067	-.002	.099
	2013-2014	.040	.018	.162	-.009	.091

* $p < 0.05$

The results indicated that the mean final high school GPAs for the 2010-2011 ($M = 3.31$, $SD = .43$) academic year was statistically significantly different than the mean for 2014-2015 ($M = 3.38$, $SD = .41$). Although there was a statistically significant difference identified, it was only for two of the five aid years, and this difference is not relevant to the focus of the study. Variations in academic achievement can be expected between different cohorts of students and diverse aid years.

ACT scores. For the second portion of this section of the study, a three-way (5x2x2) ANOVA was conducted to evaluate the effects of academic years, TELS award types, and employment statuses on one another in relation to student ACT scores. The three independent variables in this study were academic year, TELS award type, and employment status. ACT composite served as the dependent variable, with higher ACT scores indicating higher levels of academic achievement. The results of the factorial ANOVA are shown in Table 6.

Table 6

Factorial ANOVA Results—ACT Score

Source	SS	df	MS	F	p	η_p^2
Corrected Model	1535.904	19	80.837	7.489	< .001	.027
Intercept	2151872.5	1	2151872.5	199360.643	< .001	.975
Award (A)	985.991	1	985.991	91.347	< .001*	.018
Employment (E)	10.018	1	10.018	.928	.335	.000
Academic Year (Y)	113.310	4	28.328	2.624	.033*	.002
A x E	32.294	1	32.294	2.992	.084	.001
A x Y	117.322	4	29.330	2.717	.028*	.002
E x Y	23.059	4	5.765	.534	.711	< .001
A x E x Y	14.326	4	3.582	.332	.857	< .001
Error	54843.644	5081	10.794			
Total	2523152	5101				
Corrected Total	56379.548	5100				

* $p < .05$

Interaction effects were examined prior to main effects. The interaction between award types and award years, $F(1) = 2.717$, $p < .05$ was considered to be statistically significant. According to the results, there were statistically significant differences in the means of award types on ACT scores achieved for the two conditions of Aspire and

HOPE only, $F(1) = 91.347$, $p < .05$ and award years of 2010-2011, 2011-2012, 2012-2013, 2013-2014, and 2014-2015, $F(1) = 2.624$, $p < .05$. η_p^2 estimates of .018 and .002 were observed, respectively, indicating small effect sizes for all statistically significant categories (Cohen, 1988). The remaining predicted interactions were not statistically significant.

As mentioned, a statistically significant result was found for ACT scores between academic years. This independent variable had five levels. Because a statistically significant result was determined, and there were five levels to the independent variable, a post hoc test was conducted. The post hoc Tukey HSD test was selected. The test compared the 2010-2011, 2011-2012, 2012-2013, 2013-2014, and 2014-2015 years.

Table 7 includes the results of the post hoc Tukey HSD test.

Table 7

Tukey HSD Test Results for ACT Scores Academic Years

(I) Academic Year	(J) Academic Year	Mean Difference (I-J)	Std. Error	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
2010-2011	2011-2012	.06	.149	.994	-.34	.46
	2012-2013	-.16	.147	.815	-.56	.24
	2013-2014	.04	.144	.999	-.35	.43
	2014-2015	-.45	.145	.017*	-.85	-.05
2011-2012	2010-2011	-.06	.146	.994	-.46	.34

	2012-2013	-.22	.147	.566	-.62	.18
	2013-2014	-.02	.144	1.000	-.41	.37
	2014-2015	-.51	.146	.004*	-.91	-.11
2012-2013	2010-2011	.16	.147	.815	-.24	.56
	2011-2012	.22	.147	.566	-.18	.62
	2013-2014	.20	.145	.647	-.20	.60
	2014-2015	-.29	.147	.275	-.69	.11
2013-2014	2010-2011	-.04	.144	.999	-.43	.35
	2011-2012	.02	.144	1.000	-.37	.41
	2012-2013	-.20	.145	.647	-.60	.20
	2014-2015	-.49	.144	.006*	-.88	-.10
2014-2015	2010-2011	.45	.145	.017*	.05	.85
	2011-2012	.51	.146	.004*	.11	.91
	2012-2013	.29	.147	.275	-.11	.69
	2013-2014	.49	.144	.006*	.10	.88

* $p < 0.05$

The results indicated that the mean ACT scores for the 2010-2011 ($M = 21.89$, $SD = 3.25$), 2011-2012 ($M = 21.83$, $SD = 3.16$), and 2013-2014 ($M = 21.85$, $SD = 3.50$) academic years were statistically significantly different than the mean for 2014-2015 ($M = 22.34$, $SD = 3.32$). Although there were statistically significant differences identified, these differences were not relevant to the focus of the study. As previously mentioned,

variations in academic achievement levels can be expected between different cohorts of students and diverse aid years.

Because statistically significant results were found, the means and standard deviations of the groups were examined. Post hoc tests were not conducted for award types due to the statistically significant independent variable having only two levels. However, aid years were separated since a statistically significant interaction between award types and aid years was identified, and a post hoc Tukey HSD was conducted. The post hoc test was decided upon, because the independent variable of award year had five levels. Table 8 illustrates the means and standard deviations for the ACT score measure as a function of the independent factors.

Table 8

Means and Standard Deviations of ACT Scores

Award Type	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Aspire	21.49 (3.28)	21.49 (3.34)	21.40 (3.58)	21.00 (3.46)	21.55 (3.34)
HOPE Only	22.11 (3.22)	22.08 (2.99)	22.49 (3.13)	22.37 (3.43)	22.77 (3.22)

From these data, it was determined that Aspire students did not perform as well as HOPE only recipients no matter the aid year and some slight fluctuations in scores existed in individual award types between aid years. η_p^2 was estimated at .018 for award type and .002 for academic year. Therefore, both were categorized as small effects

(Cohen, 1988). Aspire students earned lower ACT composite scores than HOPE only recipients across all academic years. This information demonstrates the statistically significant differences in award types and academic years.

Academic Achievement Relative to Award Type. Previous research has established differences in academic achievement exist among various student populations in relation to TELS eligibility. However, recognizing what factors, if any, may contribute to a student either performing well or struggling academically in a college environment, is vital. The first research question, are there statistically significant differences between the cumulative college GPAs of Lottery scholarship recipients, based upon the categories of initial scholarship eligibility relative to employment status, housing status, and academic years, and are there statistically significant interactions among the variables, was intended to identify those factors.

The results of the four-way ANOVA revealed a statistically significant difference between TELS award types when considering the 24 attempted credit hours TELS GPA. Further review of the descriptive statistics revealed students awarded Aspire earned, on average, lower GPAs than those students receiving only the HOPE scholarship no matter categorization. For instance, employed Aspire students earned lower average TELS GPAs compared to HOPE only recipients who were also working; this was true for all academic years included in the study. The same outcome was observed between unemployed student groups.

When considering the 24 attempted credit hours benchmark GPAs, an individual should consider the benchmark's minimum scholarship eligibility standard. For the

CHAPTER V

DISCUSSION

College Academic Achievement

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When reviewing the 24 attempted credit hours benchmark GPAs, an individual should consider the benchmark's minimum scholarship eligibility standard. For the

Lottery scholarship, students are required to have earned a minimum 2.75 cumulative TELS GPA upon attempting 24 credit hours. During only one academic year and only in one category, Aspire students earned an average TELS GPA above 2.75. This group comprised of employed students enrolled during 2014-2015. For all other academic years, both employed and unemployed Aspire students earned average TELS GPAs below 2.75. Therefore, it was determined retention of Lottery scholarship funding after the year of initial enrollment in a post-secondary institution is improbable for a significant number of Aspire students.

On the contrary, seven categories of employed HOPE only recipients earned an average TELS GPA in excess of 2.75. For the remaining three categories, the GPAs were .11, .04, and .04 short of meeting the minimum requirement. The overall HOPE only average TELS GPA was 2.54. The overall Aspire average TELS GPA was 2.35. Although neither GPA exceeded the minimum standard for continuing eligibility, it is clear a difference existed between the award groups.

In order to better understand the strength of the observed relationship between award types, a partial eta-squared statistic was calculated. η_p^2 was computed as .006 for award type, indicating a small main effect. Therefore, although a statistically significant difference was identified between award types, the effect was not considered large.

Academic Achievement Relative to Employment Status. The results of the factorial ANOVA identified a statistically significant difference existed between the mean GPAs for employed and unemployed students. Across all categories studied, students who earned wages also received higher average TELS GPAs at the 24 attempted

credit hours benchmark. All HOPE only awardee categories with an average GPA above the eligibility requisite were employed. No unemployed groups awarded HOPE only earned sufficient average GPAs to continue receiving the Lottery scholarship. The overall average GPA of employed HOPE only students was 2.82, while the average for unemployed students with the same award type was 2.27. Therefore, the average employed HOPE recipient was able to retain his or her scholarship based on TELS GPA, but the average unemployed awardee failed to maintain eligibility requirements by a significant margin.

Both unemployed and employed Aspire students did not earn average TELS GPAs above the minimum standard, other than in one category. In all categories unemployed individuals' averages were inferior to their employed counterparts' means. For example, an employed Aspire recipient living off campus earned an average TELS GPA of 2.64 during 2010-2011. Aspire awardees during the same academic year who were unemployed earned an average TELS GPA of 2.07. To put this difference into perspective, a GPA calculator was used to determine the number of credit hours and grades needed to increase these figures to 2.75 by the 48 attempted credit hours benchmark review. This review would be the next opportunity for a student who lost scholarship eligibility to achieve minimum standards and regain entitlement. The GPA calculator is available for use on the APSU webpage.

According to the calculator, an employed student who earned the average 24 attempted credit hours TELS GPA would need to pass eight courses for a total of 24 attempted credit hours with seven B grades and one C grade to earn a TELS GPA of 2.76.

Admittedly, this is only one variation of how grades could be earned to achieve the same result. For example, if a student earned several A grades, they could also earn additional C grades or even a D and still manage to attain the required standard. Also, students could attempt more than 24 credit hours between benchmarks. In the scenario for an unemployed student who earned a 2.07 TELS GPA, they would need to pass eight courses with four grades of A and four B grades to manage a 2.79 TELS benchmark GPA. Earning one less A grade would result in the student not meeting regain eligibility. The same limitations exist with this example since students could attempt more than 24 credit hours between benchmark intervals. Students could also repeat previously failed courses and substitute the new grades to increase their GPAs. However, this example demonstrates how much more difficulty a student in the unemployed category would have when attempting to regain the scholarship, in comparison to someone in the employed group. A student earning a GPA indicative of average grades of C would likely not be able to earn all A or B grades. Conversely, the student earning a 2.64 TELS GPA may need to only make slight modifications in scheduling, study habits, or other factors contributable to academic achievement, in order to earn sufficient scores to be awarded the scholarship in the future.

Similar to the first statistically significant variable, a partial eta-squared statistic was calculated to determine effect size. η_p^2 was computed as .042 for employment status, indicating a medium effect. This was the largest effect size of all statistically significantly different categories identified.

Academic Achievement Relative to Housing Status. A student's choice of housing can affect how well they perform academically. For this particular study, results indicated a statistically significant difference in TELS GPAs for students who resided in campus housing and those who commuted. A review of the descriptive statistics indicated the average TELS GPA for Aspire students living on campus was 2.38, and commuters within the same award group earned an average 2.32 TELS GPA. The HOPE only category earned averages of 2.64 and 2.45 for on campus and off campus residents, respectively. η_p^2 was computed as .003 for housing status, indicating a small interaction. These results did not suggest housing status alone could be a significant determinant of a student's academic success.

Non-statistically Significant Results. Remarkably, all other interactions were not found to have statistically significant differences in TELS GPA. Therefore, the categories of academic year and all interactions between independent variables were not studied further. The focus was then placed on academic achievement during high school to determine if similar results were observed within the same student population prior to college transition.

High School Achievement Comparison

Upon completion of the first section of the study, the second portion of research involved high school achievement. The second research question is: are there statistically significant differences between the final cumulative high school GPAs and ACT scores of Lottery scholarship recipients, based upon variables identified during the first test to have statistically significant connections? This information was included due to the focus

of the overall study. Since the study concentrated on college academic achievement as it relates to Lottery scholarship recipients, knowing if factors with statistically significant differences in TELS GPAs during college were observed among the same groups in high school could aid researchers in understanding effects associated with college transition.

ACT Academic Achievement Relative to Award Types. Award types were found to have statistically significant differences when considering final high school GPAs and ACT scores. On average, Aspire recipients earned a composite ACT score of 21 and HOPE only awardees earned an average composite score of 22. Additionally, Aspire students did not earn a higher average composite score than HOPE only students during any academic year. It is interesting that for both groups, the minimum ACT composite required for Lottery scholarship eligibility was achieved. However, the HOPE only students clearly outperformed the Aspire students on the ACT. The final high school average GPA for the Aspire group was 3.31. For the HOPE only students, the average was 3.37. While these are different from one another, they are not considered significant enough to have a major impact on college academic achievement. After all, the difference between the two scores is .06.

Academic Achievement Relative to Employment Status when Considering GPA. This category was integral to the overall study, because a medium effect size was observed in relation to employment statuses and TELS GPAs. Therefore, it was important to identify not only if statistically significant differences existed between high school GPA and employment statuses but also how large the effect was considered. Although a statistically significant difference was identified for the category, η_p^2 was computed as

.009. This was a small effect compared to .042 for employment status in relation to TELS GPA. Therefore, it can be derived that the variance in academic achievement of students in the same category is not as large during high school as it is in college.

Lack of Statistically Significant Results when Considering Employment and ACT Score. As mentioned previously, statistically significant differences were identified between employment statuses and TELS GPA averages. Due to this finding, high school achievement became a focus to identify if differences were observable during this time period as well. ACT score was utilized as a dependent variable, because it is an accurate indicator of academic achievement. For instance, high school GPAs could fluctuate considerably between institutions. This could be due to a number of factors including, but not limited to school, institutional academic standards and quality of teachers and administrators. However, the ACT is standardized. Therefore, if statistically significant differences were not identified among the students, this discovery would be significant to the study. The differences in ACT scores among employed students were not found to be statistically significant. Therefore, it was concluded that the students, based on ACT scores, performed at the same academic level, on average, while enrolled in high school.

Academic Achievement Relative to Academic Year. For this portion of the study, statistically significant differences were identified within the ACT score and high school GPA groups between academic years. Essentially, these results suggest there are differences between the ACT scores and GPAs of students when considering various academic years. This result is not unanticipated, because each of the academic years contain diverse students who cannot be included in more than one year. Therefore, these

differences could simply be due to variations within each student group from year to year or modifications made to the actual ACT or course content from year to year. These findings were not vital to the overall conclusion of the study.

Interaction between Award Types and Academic Years when Considering ACT Score. Comparatively, statistically significant differences were observed in the relationship between academic years and award types when using ACT scores as the dependent variable. Essentially, HOPE only and Aspire students earned different ACT scores not only due to award type but also from aid year to aid year. Aspire students ranged from 21.00 to 21.55 and HOPE only awardees earned an average range of 22.08 to 22.77 between academic years. Aspire and HOPE only students differed by one point according to ACT composite scores. Although a statistically significant difference was identified for the category, η_p^2 was computed as .002, a small effect.

Implications

Retention. The results of this study reveal a serious issue concerning Lottery scholarship retention. Specifically, the average Aspire recipient does not earn the necessary benchmark TELS GPA to remain eligible for the award, and for many of the HOPE only recipients, the average TELS GPA was also below the minimum required for continued eligibility. As a result, approximately 50% of Aspire and HOPE only recipients do not retain scholarship eligibility after their first academic year. These statistics impact institutions of higher education in noteworthy ways.

Some institutions might be capable of enrolling crucial quantities of new students from year to year, but they must also work assiduously to retain currently enrolled

students. A student may attend college during his or her first year, due to adequate financial aid funding. If average Lottery students lose the Lottery scholarship in their first year, they may not return. For every enrolled student who does not register for an upcoming academic year, an institution must enroll two new students to increase enrollment figures. Therefore, enrollment statistics can be significantly impacted and funding based on an outcome based funding methodology could be reduced based upon the overall success or failure of the institution to retain and graduate students. Colleges and universities should be cognizant of the issue of scholarship retention and how the funding impacts the students in order to develop effective retention programs in the event a student fails to retain scholarship eligibility. A student could lose his or her scholarship based upon a 2.74 TELS GPA but still be considered an overall good student with the potential to increase the GPA and graduate. If that student cannot enroll due to finances, institutions could implement institutional scholarship programs to assist for a period of time until they reach their next benchmark to determine if they regain scholarship eligibility. Success of a program of this nature would be dependent upon identification of the students most in need and most likely to regain the scholarship. The results of this study help to identify this population.

Institutional View of Employment. There are a number of people who would agree that providing students with scholarships is a positive practice. Scholarships make attending college a reality without accepting excessive loans and can ease the stresses of paying tuition and fees while also ensuring a sufficient livelihood when caring for oneself or an entire family. Receipt of a scholarship is not always conditional upon a student

signing a work contract. However, some subsidies stipulate students must work a certain number of hours per week within an administrative or academic department each semester. This requirement may be based upon the needs of departments to have available student employees assisting with projects. However, there is another reason scholarships are sometimes contingent upon a student working at a college. According to Laura Perna (2012), “drawing on ... limited available research, college administrators, faculty, and researchers have generally assumed that undergraduates should simply work no more than 10 to 20 hours per week at a job on campus, on the theory that such an experience will increase their integration into and subsequent persistence at a campus (King, 2002; Pascarella & Terenzini, 2005; Swail, Redd, & Perna, 2003)” (p. xiii).

This concept is important to understanding why employed students may have earned better grades than those who were unemployed. The data only verified a student worked or did not work for the academic year they were awarded the Lottery scholarship. Unfortunately, the information does not inform the researcher of the type or place of employment. Therefore, based upon how the employment data were pulled from student entered data, some of the employed students could have been working within an administrative or academic department at APSU. If this was the case, they may have performed better academically because of the existence of a strong office support system or having a higher level of connectedness to the campus. Several employees within the Office of Student Financial Aid and Veterans Affairs at APSU were once student employees on campus. These individuals became connected to the department, persisted and earned degrees, and then became full-time employees.

Studies related to academic performance and employment have discovered mixed outcomes when it comes to how successful students who work are in comparison to those who choose not to work while enrolled. For example, Bradley (2006) examined the academic performance of 246 undergraduate students. The study focused on various aspects of the students' employment and found that "the students who did not work were indistinguishable from their peers who worked" (Bradley, 2006, p. 496-497). In a study reviewing similarities and differences between students who worked and those who did not work, Brandon Lang (2012) mentioned a study where "one-third of ... [sampled working students] answered that work "much" or "greatly" interfered with their studies" (The Effects of Employment, para. 2).

Unlike these results, "numerous studies have concluded that paid employment does not have any negative effects upon the grades of college students" (Lang, 2012, The Effects of Employment para. 3). Lang (2012) referenced a study by Canabal (1998) where "it was found that there was a positive relationship between respondents' GPAs and their degree of participation in the paid labor force" (The Effects of Employment para. 3). The study included "8304 students attending 11 colleges in Illinois" (Lang, 2012, The Effects of Employment para. 3).

Employment while in college is not simply a trend that will eventually subside; ever-rising tuition and fees, new economic realities, and even student perceptions of what they now need to survive compared to the items someone would have considered necessities a couple of decades ago contribute to the increase in student employment rates. In regards to student perceptions of needs, many individuals now consider mobile

devices, such as cellular phones, laptops, and tablets, to be essential. These items can be both expensive to purchase and maintain. Before the advent of these devices, students did not need to spend hundreds or even thousands of dollars purchasing the products. This is only one example of why some students must work, and there are several other factors contributing to the rise in student employment.

No matter the issues related to employment while also attempting to succeed in college, administrators cannot afford to assume a negative correlation between employment and academic achievement. Although ‘an excessive work load ... may compromise ... academic progress [, and] less study time is associated with lower learning outcomes and a higher probability of dropping out’ (Beerkens, Mägi, & Lill, 2011, p. 680), the results of this study prove employed students can succeed and even achieve higher GPAs than those students who are unemployed. This being said, assisting a student with securing employment during enrollment should not necessarily be the goal of institutions. However, targeting the population of unemployed scholarship recipients for participation in proactive academic intervention programs may prove advantageous for bolstering retention efforts.

A student’s choice to work can be based on reasons other than simply lacking the necessary resources to pay for college or other essentials. Doing so “may provide necessary work experience that [could] be rewarded by the labor market after graduation [, and] it may also contribute to building a social network that [would] help find a job in the future” (Beerkens et al., 2011, p. 681). Knowing this, higher education administrators should seek opportunities to encourage students who are working and develop programs

geared towards success for these individuals. A great example of this is offering more flexible class times and office hours. Higher education institutions are offering some of the most flexible schedules possible today. Conventional courses are available at night and weekends. Online learning has become a popular option for non-traditional professionals. There are even hybrid courses for individuals who desire flexibility while also meeting face-to-face for a number of lecture opportunities. These options should continue to be offered and promoted as beneficial opportunities for students with demanding schedules. Faculty member availability is also important and should be considered when implementing student success initiatives.

If institutions fail to embrace initiatives focused on working students' successes, choosing between continuing their educations and providing for themselves and their family's immediate needs may be unavoidable. If these individuals elect to drop out of school, the impact is not solely on the students but the institution as well. The student is impacted as far as not being able to continue their education and increase marketability. Institutions must then employ additional effort and resources towards enrolling new students to compensate for the financial loss. Beerkens et al. (2011) suggested "a high drop-out rate [was] wasteful from the perspective of social costs and the costs of individual students" (p. 680). Schools expend funds to recruit and retain individuals, and if a student accepted loans, they invested in an education they may never obtain. No matter if the student graduates or not, they are obligated to recompense the borrowed funds, without the aid of augmented salaries based on attainment of a degree.

The primary orientation model of student employment assumes the intensity of paid employment only matters when it coincides with a disinterest in academics. As such, the expectation is that motivated students are generally able to balance paid work and their scholastic responsibilities (Lang, 2012, Two Models of Student, para. 1). Imagine a student who is motivated towards being successful and earning a degree and one who is enrolling in college to satisfy a parent, friend, or other individual. The driven student is more likely to consistently complete school in a timely manner, earn good grades, and devise successful alternatives when situations do not work out as planned. If employed, they may also be more inclined to both work and still satisfy all academic responsibilities. This is essentially what the primary orientation model suggests when trying to determine how effective paid employment will be for various students. There are scenarios where inspiration level may be the only difference between a successful and unsuccessful student. University administrators should not neglect employing programs geared towards motivating students. These initiatives could serve purposes as straightforward as describing opportunities for employment after graduation or high impact practices such as study abroad programs or undergraduate research opportunities. Students who become more involved in campus life and programs may be more encouraged to continue working on their academic goals.

Work Ethic. The concept of work ethic places importance on not simply completing responsibilities but also how people perform tasks. The principle proposes that performing work well is honorable and industriously completing duties should be something everyone strives to achieve. This is an important topic to review when

attempting to understand the results of the study. Concluding employed students earned higher TELS GPAs than their unemployed counterparts is not sufficient; leaders must do their best to determine why these data were true. Until administrators determine the reasoning behind the higher average GPAs, they cannot effectively assist the underperforming students. The determination could be that several factors contribute to the students' successes. Some of these factors may be associated with how colleges and universities help individuals transition to a higher education setting. However, there could also be contributing aspects more sociological or psychological in nature.

Although the results of the study establish more successful students were employed, it cannot be determined if the students were considered excellent employees. No matter this limitation, beneficial principles people can acquire while employed, exist. These ethics include being on time to work and remaining at work for the time period required, ensuring deadlines are not exceeded, developing integrity and becoming someone who can be trusted by colleagues, abiding by established procedures, and not wasting time by communicating unnecessarily but completing assigned tasks (Stulz, Shumack, & Fulton-Calkins, 2010). All of these ideas are integral to a student's experience as well. Individuals should strive to attend classes regularly and be in class prior to the beginning of lessons. Students need to manage their time in such a way that all work can be completed within mandated time periods. They are expected to adhere to instructors' rules for classrooms, and they cannot afford to waste time and not complete assignments. Employed students could have learned these vital principles while the unemployed individuals may not have had opportunities to acquire those lessons.

A student may have been raised in a household where employment, personal wealth, success, or hard work were not valued. If this was the case, the individual would likely find adaptation to an institution of higher education problematic. Faculty and other administrators cannot afford to simply teach a student basic school policies and how to navigate financial aid requirements, registration, and other offices associated with enrollment and graduation. Students in this type of scenario need to learn additional information, such as time management, budgeting, and stress management, in order to become efficacious undergraduates. The implication here is that schools should purposely review transitional courses for freshman or transfer students. This review ensures the curriculum embraces an all-inclusive approach to college transition rather than a methodology where the student is taught essential items to complete first year activities without progressing into strategies for success during continued enrollment and beyond graduation.

College Transition. Transition to a higher education setting was briefly discussed in relation to retention efforts at an institution. However, the topic should be further explored in light of the study results. Outcomes indicated differences in ACT scores between high schoolers were not statistically significant, and although statistically significant differences were identified relative to final high school GPAs, the effect of the variance was small. This is a striking dissimilarity from the results using TELS GPA for students who remained within the same groups. This establishes that differences in TELS GPAs among students cannot be compared to the students' high school achievement to explain why statistically significant differences were present.

Parental influence is a topic integral to understanding how students convert to college life. Could a student's choice to not work been attributable to excessive parental support? Were these students victims of helicopter parents who could no longer be as involved in a college environment where their children were significant distances from them? These are both questions relative to the matter of parental involvement as it relates to college adaptation.

Independence is an important aspect of college life and learning how to become productive members of society. College administrators and other employees may be quick to encourage student independence, but this factor could also contribute to failure. This statement is not to suggest independence is not imperative and that it should not be expected for a college student to perform tasks on their own. Yet, during the transitioning period when students are moving from high school environments where they were nurtured by family or friends to atmospheres where they are expected to perform tasks on their own and learn how to maneuver difficult situations, encouraging parental involvement on even a minimal level may be useful. Utilizing "orientation programs as venues to develop clear channels of communication with parents and families, educate them on campus resources, and provide information about campus contacts and information disclosure policies such as the Family Educational Rights and Privacy Act" (Kiyama et al., 2015, p. 32) can be a strategic practice.

Some literature suggests "parents can better support students if they are knowledgeable of campus resources and services, and can refer students accordingly" (Kiyama et al., 2015, p. 33). A student's choice to leave home and pursue an

undergraduate degree does not imply he or she do not continue to share strong relationships with their parents. They will undoubtedly foster new relationships at institutions, but they will likely still rely on their parents', or some other individuals', experiences to assist them when issues arise. Effective parental informational sessions can ensure these individuals possess the resources necessary to assist their students when they may not be comfortable seeking the guidance of university personnel or fail to realize who to contact.

Another important aspect of parental involvement relates to underrepresented students. Minorities, low-income, or first generation students may be less likely to be successful in a college environment. Guaranteeing the involvement of these students' families can result in higher student success rates (Kiyama et al., 2015). It is likely many of these persons would have never attended college and will be as unfamiliar, if not more so, with higher education policies and procedures than their students. Knowledge of practices can help families feel more comfortable with a student's choice to attend college and the family member's ability to offer support to the student. Imagine how difficult staying enrolled could be for someone whose parent, guardian or other mentor suggests college is unimportant or not worth the work required in comparison to a student with a knowledgeable support system able to encourage continued enrollment. Increasing the retention of underrepresented students is also essential to receiving the maximum amount of funding possible under the outcomes based funding methodology currently employed within Tennessee (THEC, 2010).

This information involves a delicate balance between safeguarding student independence and fostering strong parental or guardian support networks to increase individual resilience. University staff and leaders must be prepared to deal with the demands of promoting such a setting. The process of transitioning to a higher education environment cannot neglect the involvement of individuals associated with the student. It is not only important to garner an excellent support network within the confines of the school but also fully encompass families. This process may involve rethinking how parents and others are involved in orientation programs, considering how students and parents are informed of releases of information in accordance with FERPA requirements, and how parents and those close to students are involved in future events. Leaders may elect to develop parent relation programs working within the information disclosure limitations established by the FERPA or webpages, focused specifically on parents, to share important information.

If students are doing well in high school and performing at relatively the same academic level, what can be attributing to the statistically significant differences in college? Answering this question requires continued research.

Future Research

Impact of Grit. This study determined which APSU students lost Lottery scholarship eligibility. However, there are still unanswered questions. One of the most obvious of those questions is why students from these groups did not achieve the same level of success as their peers. Although several reasons could exist, studying characteristics associated with grit may elucidate causes contributing to

underperformance. Grit is essentially someone's determination to achieve goals when experiencing adversities or obstacles. APSU has been collecting grit data for two years. A researcher could utilize the data from this study along with the grit records to determine if statistically significant interactions exist.

Choice of Major. All degree programs are not synonymous and require varying courses. Certain majors may entail classes considered more challenging than others. For instance, a student who is not a science major may fulfill a core science requirement by completing a biology course intentionally developed for individuals who are not pursuing a degree associated with scientific disciplines. In contrast, a student who selected chemistry as his or her major, would need to successfully complete progressively demanding science courses. It was not within the scope of this study to research the majors of students included in the sample. Building upon this research, a person could determine which degree programs individuals were admitted to and first year courses they enrolled in. The determination could be that a student's major or choice of course schedule resulted in higher or lower academic achievement.

D-Grades, F-Grades, or Withdrawal (DFW) Rates. Reviewing students' choices of schedules leads to including courses with high DFW rates in future research. A researcher could identify how many high DFW rate courses each student registered for per term. The number of registered courses could then be compared to information in the current study to determine if students who underperformed were more or less likely to enroll in these courses. Excellent advisement is vital to student success. Additional research may discover a statistically significant interaction between courses with high

DFW rates and students belonging to groups determined to not maintain TELS eligibility. If so, an initiative could be developed where advisement included intentionally suggesting semester schedules with the potential to result in more successful outcomes.

Number of Hours Worked and Type of Employment. Previous studies have provided evidence supporting employment as a positive aspect of college life. A study conducted by Gary Pike, George Kuh, and Ryan Massa-McKinley (2008) indicated a negative relationship existed between students' grades and working in excess of 20 hours a week. However, students working a maximum of 20 hours weekly were more likely to obtain adequate grades and engage in campus life. At Austin Peay State University, all Federal Work Study students are limited to 20 work hours each week classes are in session. This rule was established, in part, to ensure students could earn wages to assist with expenses without negatively impacting academic studies. This study used income data to determine if students earned wages during the academic year they were initially enrolled and received the Lottery scholarship. Employment status was determined to be employed if wages existed for the student or unemployed if they did not. This type of determination limits the researcher to only identifying employment status based on reported income; information pertaining to hours worked was not available.

Therefore, a future study could seek to not only identify employment status but also how many hours were worked weekly while the student was enrolled in college. A questionnaire could be utilized to obtain the data. This type of study can help researchers determine if positive or negative correlations exist between the number of hours worked per week and TELS GPAs leading to a better understanding of the study's employment

dynamic. For instance, if students who reported working less hours earned higher TELS GPAs than students reporting more hours worked, this would suggest working fewer hours may be a more positive choice. Less work hours may correlate to additional opportunities to study and complete assignments. A questionnaire could also be distributed to identify the type of income received. Students may have reported scholarship monies as income, worked in a Federal Work Study funded position, or been employed at a business outside the university. The type of employment could impact students' academic achievement levels. Such a study could help researchers determine if Federal Work Study students are more successful than individuals working in positions not directly connected to an institution.

Retention. Due to the importance of retention for not only determining state funding levels but the overall success and reputation of an institution, research should be conducted to determine how many students included in the study remained enrolled after their first year and eventually graduated. Graduation rates would not be available for students included in more recent academic years, but some students included in the study may have already earned degrees. Identifying enrollment trends according to award types can further narrow the population of students most at-risk of losing scholarship eligibility or not persisting. The more precise the population, the better administrators can target individuals to include in operative programs and allocate appropriate funding for the initiatives.

Parental Involvement. Involvement of parents or other people associated with a student has been established as an important aspect of the student's college experience. In

order to not merely make conjectures related to parental involvement and the students included in the study, the undergraduates could be surveyed to determine how involved parents were during high school and college enrollment. The researcher could then determine if students who reported high levels of parental involvement while in high school but low involvement during college were more or less successful than other groups. This type of study would provide administrators with data to determine if investment in parental orientations would be worthwhile.

Mentorship and Intervention Programs. O’Keefe (2013) believed that “developing a ‘sense of belonging’ was critical to the success of college students, particularly for the retention of students who were considered to be at risk of non-completion” (The Disconnection of Students, para. 1). A mentorship opportunity may be an excellent example of a method for helping students become more connected. Mentors would either be faculty or staff who were familiar with campus. Their knowledge would be shared with these students, and the information provided could help the individuals feel more comfortable participating in campus events or ensure they know who or what office to communicate with when experiencing an issue.

Bernier, Larose, and Soucy (2005) were interested in academic mentoring and studied the relationships between mentors and mentees. The researchers cited Tinto as “suggest[ing] that although students’ academic and socio-emotional predispositions influence their adjustment to college, the impact of these factors depends upon the quality of students’ interactions with other members of the college community” (Bernier, Larose, & Soucy, 2005, p.30). Bernier, Larose, and Soucy (2005) indicated that “Tinto further

suggest[ed] that faculty members, who represent the institution's rules and values, [were] especially determinant in students' adjustment to the institution" (p. 30). This information is not only assumed. In fact, "empirical research has supported these claims by showing that informal contacts (outside the classroom) between college students and faculty have a positive impact on students' academic performance, satisfaction with college life, retention, and education and career goals" (Bernier et al., 2005, p. 30).

Pan, Guo, Alikonis, and Bai (2008) studied the effectiveness of intervention programs to determine if programs created to assist students who were underachieving really facilitated student success. The study found that intervention programs did have a statistically significant impact on increasing student success, but the level of impact between programs varied significantly (Pan, Guo, Alikonis, & Bai, 2008). No matter the fact that the programs' effectiveness varied, they were all operative. This information supported creating proactive programs focused on intervening to assist students before they found themselves in scenarios where they already failed to maintain standards. Such a mentorship program could be developed and used as the basis for future research.

Timing of Mentorship Program Implementation. Answering the question of whether or not to implement a mentorship program and determining who should participate in the initiative can be achieved by studying available data. Yet, even if these concerns are resolved, a researcher must still consider the timing of a program's execution. Turner and Thompson (2014) studied the subject of college retention initiatives created to affect freshmen students considered to be part of the millennial generation.

As part of their study, the researchers determined that “the first year of college was critical to educational persistence and retention” (Turner & Thompson, 2014, Background section, para. 1). This information is enlightening when considering a large percentage of Tennessee HOPE Scholarship losses take place at a student’s first 24 attempted credit hours benchmark. This benchmark is usually met at the conclusion of a freshman’s initial spring semester, as long as they attended courses during the fall. Therefore, studies agree that the first year of college enrollment is the most important time period to attempt to mentor or provide other types of support to students. This makes sense, since this is a time of transition for many students where they are trying to adapt to new surroundings and determine their future goals. Turner and Thompson’s (2014) study mentioned that there were already a number of colleges that have “creat[ed] some form of freshman support systems to engage the new learners” (Background section, para. 8). A Tennessee HOPE Scholarship mentorship program could be developed as an extension of an already operational freshmen transition program at APSU.

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APPENDICES

APPENDICES

VI. REVIEW BOARD LETTER OF APPROVAL

APPENDIX A

INSTITUTIONAL REVIEW BOARD LETTER OF APPROVAL



**AUSTIN PEAY STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD**

Date: 11/6/2015

RE 15-053: The Academic Success of Lottery Scholarship Recipients Relative to Initial Eligibility, Housing Status, Employment, and Gender

Dear Johnathan Button,

We appreciate your cooperation with the human research review process. This letter is to inform you that study 15-053 has been reviewed on expedited level. It is my pleasure to inform you that your study has been approved, and meets the criteria for exempt from further review. Exemption is granted on the basis of 45 CFR 46.101(b)(4): research involves only the collection and study of existing data that will be provided to the PI as de-identified data (individual identifiable data will not be collected or reported). You are free to conduct the study at this time.

This approval is subject to APSU Policies and Procedures governing human subject research. The IRB reserves the right to withdraw approval if unresolved issues are raised during the review period. Any changes or deviations from the approved protocol must be submitted in writing to the IRB for further review and approval before continuing. Changes in the protocol could change the exempt status and would require further review but the IRB.

This approval is for one calendar year and a closed study report or request for continuing review is required on or before the expiration date, 11/6/2016. If you have any questions or require further information, you can contact me by phone (931-221-6106) or email (shepherdo@apsu.edu).

Sincerely,

A handwritten signature in blue ink that reads 'Omie Shepherd'.

Omie Shepherd, Ph. D. Chair, APIRB

Cc: Dr. John McConnell