

THE OKLAHOMA STATE UNIVERSITY VALEDICTORIAN
SCHOLARSHIP PROGRAM: CONSIDERING THE NON-
USE OF ACT SCORE IN SCHOLARSHIP
SELECTION CRITERIA

By

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CHAPTER I

Introduction

Colleges and universities continue to experience rising tuition and dwindling institutional resources and seek ways to increase revenues (Hebel, 2003). Higher educational institutions, as a result, practice tuition discounting strategies that create scholarships reducing student financial burden and leverage campus resources while meeting the institutional enrollment goals and objectives (Hubbell, Massa & Lapovsky, 2002). Tuition discounts, often referred to as scholarships, are reductions in tuition cost, and strategically managed, will allow the institution to operate with maximized economic benefits (Hubbell, et. al, 2002). However, the institution must continually monitor these discounting programs to assure reductions in tuition revenue will maximize enrollment without affecting the quality of the student population or placing a heavy economic burden upon the university (Goral, 2003; Hubbell, Massa & Lapovsky, 2002; Martin, 2002).

Enrollment management professionals should, as part of the tuition discounting strategy, review the scholarship awarding policies (Martin, 2002). Part of this review process should include reviewing the progress of all students receiving discounts and consider the policies that allowed for the granting of the scholarship. Without periodic monitoring of discounting practices institutions may see academically successful students

without scholarship benefits leaving college because of financial reasons, while academically unsuccessful students continue to benefit from tuition discounts (Goral, 2003). It is important for colleges and universities to benchmark costs of discounting programs, but it is also important for institutions to establish a benchmark for academic success for students receiving tuition discounts (Hubbell, Massa & Lapovsky, 2003). The institution should determine success rates among students receiving discounts, determine what student factors predict academic success rates, and adjust the discount awarding criteria to include the success predictors. Matching appropriate success predictors with tuition discount qualifications may favorably influence the long-term enrollment and retention goals of the institution (Martin, 2002). This should include offering tuition discounts to those students who statistically show a probability of success.

Admissions and Scholarship Awarding Practices

High school grade point averages in combination with ACT or SAT scores are traditionally used when assessing a student's potential to adequately perform collegiate work (Hendrix, 1968; Larson & Scontrino, 1976). These averages and scores often establish the baseline for college admission requirements. Collectively and independently these same averages and scores are often used when awarding scholarships. From the perspective of college and university administrators, scholarships may be referred to as tuition discounts or waivers.

Not unlike other universities, Oklahoma State University also uses ACT scores and grade point averages as a determining factor in the awarding of most tuition

discounts (Oklahoma State University Scholarship Frequently asked questions, 2004). However, Oklahoma State University has a tradition of offering tuition discounts to Oklahoma high school students that have achieved the status of Valedictorian. This tuition discounting program is appropriately named “The Valedictorian Scholarship.” In the case of the Oklahoma State University Valedictorian Scholarship program, the independent use of the Valedictorian academic honor becomes the baseline for determining the recipients of a \$1,250 annual tuition discount.

Purpose of the Research

The purpose of this study is to determine if Oklahoma State University should have an expectation that Valedictorian Scholarship recipients, without ACT score consideration, will be successful when success is defined as first-year Valedictorian Scholarship recipients completing at least twenty-eight credit hours with a grade point average of 3.0 or greater during the first year of academic study. Oklahoma State University traditionally awards Valedictorian Scholarships to students with high school Valedictorian status regardless of ACT score (Oklahoma State University Valedictorian Scholarship documents, 2004). Since scholarships or tuition discounts are offered to Valedictorian students, it is important to evaluate the postsecondary achievement of Valedictorians. By measuring the achievement of Valedictorian Scholarship recipients against the established success criteria of the Oklahoma State University, the academic success of the Valedictorian program may be statistically endorsed.

Importance of the Research

This investigation is potentially important since Valedictorian tuition discounts are offered based on the label of Valedictorian. The findings of this study may influence Oklahoma State University administrators to review tuition discounting practices and scholarship programs and perhaps challenge institutional traditions and methodologies of institutional scholarship awarding practices.

The Valedictorian Scholarship Recipient

The population sampled was Oklahoma State University students receiving Valedictorian Scholarships and matriculating as first-time enrollees between fall 1999 and spring 2003 semester. The postsecondary grade-point average and the number of credit hours earned during the first academic year of the Valedictorian's enrollment were the academic measurements. The first academic year includes Fall, Spring and subsequent Summer semester following the Fall semester of first matriculation.

Defining Academic Success

For the purpose of this investigation, postsecondary success for the Valedictorians was defined as the completion of at least 28 credit hours with a minimum grade point average of 3.00. The scholarship continuation policy of Oklahoma State University requires Valedictorian scholars to complete 28 credit hours during an academic year,

inclusive of the summer academic term, with a cumulative grade point average of at least 3.00 (Oklahoma State University Valedictorian Scholarship document, 2004).

Understanding Tuition

Tuition is the price charged to a student for instructional service (Meisinger, 1994). Meisinger (1994) also concludes that when setting tuition prices the institution may consider the tuition of peer institutions, the need to balance the institutional budget, student financial aid need, the political tradition of the institution or state system, and the general economic conditions of the state, region, or country.

The Rising Cost of Tuition

Nationally, the 2003/2004 tuition cost at four-year public colleges rose over 14% from the previous year. It is the largest increase in nearly 30 years (Farrell, 2003). Federal financial aid policy seems to have shifted away from higher education access for low-income students to the concerns of affordability for middle class students (Collins, Hobson, Karger & Wick, 2000). Collins, et. al. (2000) reports funding for student loans has more than doubled while the federal funding for Pell Grants remained flat. Federal assistance is available only for eligible students, and for most students it covers only a part of the cost of education. Thus, institutions often fill the gap between tuition cost and federal aid with institutional scholarships (Collins, Hobson, Karger & Wick, 2000; Hebel, 2003; Hubbell, Massa & Lapovsky, 2002). Some scholarships are generated through

endowment earnings, but a portion of scholarship dollars are provided through "unfunded scholarships," tuition discounts, and waivers (Collins, Hobson, Karger & Wick, 2000).

The Tuition Discount

A tuition discount is an institutional strategy set in place to reduce the cost of tuition for selected students based upon some objective set by the college or university (Hubbell, Massa & Lapovsky, 2002). The objective may be to increase enrollment of academically gifted students, low-income students, meet enrollment goals, maximize revenues, and the resources and capacity of the institution (Hubbell, Massa & Lapovsky, 2002). Reductions in tuition costs through discounting programs are often awarded on a student by student basis using institutionally-determined awarding criteria (Curry, 2000).

Discounting as Enrollment Management

While tuition discounts have been practiced for many years, they became a commonly discussed topic in the early 1990s (Goral, 2003; Hubbell, Massa & Lapovsky, 2002). Robert E. Martin studies the economics of higher education and discounting. Martin (2002) asserts that maximizing an incoming class through tuition discounts may seem to be a plausible solution to increase enrollment and improve revenues, but discounting can actually weaken the financial standing of the institution. Tuition discounting suggests that a reduction of tuition offered to selected students will assist the institution in meeting enrollment capacity, as capacity relates to both the human and

physical resources of the institution (Hubbell, Massa & Lapovsky, 2002; Martin, 2002).

The utilities, salaries, and building costs are the same whether the classroom is filled or not (Martin, 2002). Empty seats in the classroom have a financial impact upon the college (Hubbell, Massa & Lapovsky, 2002).

Discounting is a strategy for enrollment management. Properly done, discounting offers the right amount of aid that will entice the right student into deciding to enroll (Hubbell, Massa & Lapovsky, 2002). While the definition of “right student” may vary from college to college, discounting is used to meet financial needs or wants of the student (Curry, 2000). Tuition discounting is a strategy used by admission officers at most schools for recruiting students that might not otherwise attend (Hebel, 2003).

Redd (2000) argues that the practice of discounting tuition will grant aid to wealthy students who fail to qualify for federal need-based aid. Redd (2000) reports “between 1990 and 1996, tuition discounts increased from \$3.7 billion to \$6.2 billion for students at private colleges and universities. The amount of tuition discounts grew by 79 percent for wealthy students, while low-income students saw discounts rise by only one percent.”

Schools with the high tuition discounting percentages have also experienced other problems. Redd (2000) reports schools with the highest discount percentages also experienced a drop in median SAT scores of freshmen. This finding is supported by Goral (2003) who reports that schools with deep discounts do not improve the overall quality of the student body. Goral (2003) and Pulley (2001) reported that discounts may not increase enrollments as might have been intended. Redd (2000) states “discounting

strategies are often focused on increasing enrollments of first-year students rather than on retaining students toward graduation.”

Colleges and universities using the discounting strategy must be wise, and the institution must be consistent with its mission and objectives and determine when and if institutional resources will be made available for financial aid or recruitment purposes (Hubbell, Massa & Lapovsky, 2002; Martin, 2002). Collins et al. (2000) discusses several questions that must be asked prior to implementing a discounting strategy. Primarily, institutional capacity must be determined. Once the capacity goal is determined, the institution must determine programs, target students, and decide the scholarship budget. Finally, discount programs must consider the long-term ramifications of making multi-year scholarship awards to each incoming freshman class.

A tuition discount program can be a powerful enrollment management tool. However, the loss of control in discounting practices can lead to sharp increases in the overall discount rate thus creating a reduction of net tuition revenue as well as the possibility of improperly rewarding unsuccessful postsecondary academic effort (Goral, 2003; Martin, 2000; Pulley, 2001).

The Demographics of Oklahoma

Oklahoma is a rural state with a median household money income of \$36,733 which is nearly \$7,000 less than the national average (U.S. Department of Commerce, 2004). The percentage of people in Oklahoma living below the poverty line during the three-year average of 2001, 2002, and 2003 was 14.0%. This compares to the national

percentage of 12.1% of the population living at or below the poverty line (U.S. Department of Commerce, 2004). Unfortunately, federal financial assistance and state-sponsored financial aid programs may not fully meet the needs of current and future postsecondary students in Oklahoma.

Oklahoma State University

Founded in 1890 as Oklahoma A&M College, Oklahoma State University is now a comprehensive land grant university (Oklahoma State University Catalog, 2001). Students that have attended Oklahoma State University have been honored as Truman, Goldwater, Marshall, Udall, and Rhodes Scholars, and the University continues to inspire leadership in research, education, and outreach (Oklahoma State University Admissions documents, 2004).

Providing access to higher education for the citizens of Oklahoma is a primary focus of the University. With over 23,000 students enrolled in undergraduate, graduate, and professional programs on the Stillwater, Oklahoma campus, the student body remains primarily comprised of citizens from the state of Oklahoma seeking degrees in liberal arts, sciences, business, agriculture, engineering, and veterinary medicine (Oklahoma State University Catalog 2001; Oklahoma State University Student Profile, 2004).

Oklahoma State University Admissions

Admissions requirements are established to determine if a student is reasonably prepared for academic work in higher education. According to University Admissions documents, admission into Oklahoma State University requires a student to meet the following performance requirements:

1. achieve a four-year high school grade point average of 3.00 or higher on a 4.00 grading scale, and rank scholastically among the top one-third of their graduating class; or
2. achieve a grade point average of 3.00 or higher on a 4.00 grading scale in the required 15 core high school courses (English, 4 years; Mathematics, 3 years; History, 2 years; Laboratory science, 2 years; Citizenship, 1 year; electives from the above categories or Computer Science, Foreign Language, or non-Western culture, 3 years); or
3. attain an ACT composite score of 22 or higher or a total SAT composite score of 1020 or higher.

Admissions exceptions are granted for students who have earned General Education Diplomas (GED) and meet the 15 core course requirements, adult learners, and home-schooled students. However, home-schooled students must meet the ACT or SAT composite scores requirements of the general admissions requirements. International students for whom English is considered a second language must also meet an English proficiency requirement (Oklahoma State University Admissions Documents, 2004).

Scholarships at Oklahoma State University

Since admissions requirements for Oklahoma State University are a minimum baseline, admission does not guarantee scholarship eligibility, nor does admission guarantee academic success. While a Valedictorian Scholarship recipient meets the grade point requirement for admission into Oklahoma State University, there is no assurance that the curriculum rigor of the high school has adequately prepared the student for college work. Secondly, the high school grade point average may be the result of systematic grade inflation (Bellott, 1981; 2000; Ziomek & Svec, 1995, 1997; Zirkel, 1999).

In an effort to provide academically deserving students with financial assistance or incentive, Oklahoma State University offers several scholarship programs aimed at assisting students with the cost of attendance (Oklahoma State University Scholarship Frequently asked questions documents, 2004). These scholarship programs are part of a comprehensive tuition-discounting strategy offering financial incentives for students interested in attending the University. While most tuition-discounting programs at Oklahoma State University use high school grade-point averages and ACT scores as part of the methodology of determining a scholarship recipient, the Valedictorian Scholarship award criteria considers the status of the student as a high school Valedictorian (Oklahoma State University Valedictorian Scholarship documents, 2003).

The Valedictorian Scholarship

While a high ACT score does not mean a student will be academically successful in college, a low score does not guarantee future academic failure (Paszcyk, 1994). However, the failure to consider the standardized scores when offering a substantial tuition discount may ignore valuable data about a student's academic ability since high school grade point averages and standardized scores have been shown as predictors of academic success (Platt, Turocy & McGlumphy, 2001). Such findings may suggest the use of both ACT scores and high school grade point averages when extending tuition discount offers. Cowen & Fiori (1991) reported that considering high school grade point average and admission test scores assist in predicting freshman outcomes. However, the Oklahoma State University Valedictorian Scholarship program considers the Valedictorian designation when offering the scholarship award (Oklahoma State University Valedictorian Scholarship documents, 2003).

The Valedictorian Scholarship program is a tradition at Oklahoma State University. However, "Valedictorian" has different meaning from school to school and district to district. In Oklahoma there is no state-required standard for determining a Valedictorian. Thus, each high school or school district may establish criteria for selecting a Valedictorian. While there are no set requirements, more often than not, most high school students honored as Valedictorian graduate with a 4.00 grade point average. Unless high schools use other indicators of academic success as measurements, a 4.00 average may not narrow the field when making a "first in class" determination.

The Variables of the Valedictorians

A Valedictorian has proved to be academically successful in high school as determined by some qualifying standard. The Valedictorian has navigated high school course work and has been honored by their high school. Yet the award of Valedictorian Scholar may be significantly different among different high schools. For example, an examination of the Valedictorian policies of Edmond (Oklahoma) North High School, Glenpool (Oklahoma) High School, and Bristow (Oklahoma) High School revealed differing Valedictorian awarding policies (Bristow High School, Edmond North High School, and Glenpool High School documents, 2004). Thus, a Valedictorian is required only to meet the standards of the individual school or school district, and each school may have different standards when naming the Valedictorian scholars.

A between-school or between-district comparison of Valedictorians cannot be determined simply by comparing sets of high school grade-point averages as differences in curriculum content are believed to vary among high schools. Bellott (1981) suggested that grade inflation existed. Thus, factors such as the variation of curriculum content and the possible existence of grade inflation creates difficulty in revealing any true differences of academic abilities on a school-to-school grade point average comparison.

Summary

Tuition discounts are an important part of a successful enrollment management program. However, tuition discount programs must be monitored to make sure that these

discounts are properly managed in an effort to maximize capacity of the institution (Goral, 2003; Hubbell, Massa & Lapovsky, 2002; Martin, 2002). Proper management of the tuition discount program includes establishing a benchmark against which academic success of students is measured, determining the success rates among students receiving discounts, discovering the student factors that predict academic success, and adjusting the discount awarding criteria to include these success predictors (Hubbell, Massa & Lapovsky, 2002). Long-term enrollment and retention goals of the institution may be met by offering tuition discounts to those students who statistically show a probability of success.

The Valedictorian Scholarship program is a discounting strategy aimed at recruiting and enrolling Oklahoma students with highly successful academic backgrounds. While other Oklahoma State University academic scholarships may allow a varied high school grade point average that may be less than 4.00 and an ACT score meeting or exceeding 24, the Valedictorian Scholarship program does not consider the ACT score of the scholarship recipient (Oklahoma State University Valedictorian Scholarship documents, 2004). Though the Valedictorians have excellent high school grade point averages, the Valedictorian Scholarship only considers the Valedictorian status of the student when the scholarship offer is extended. Research suggests that the combination of high school grade point averages and standardized test scores assist in predicting success in college (Cowen & Fiori, 1991; Platt, Turocy & McGlumphy 2001). This research attempts to compare postsecondary academic success of two groups of Oklahoma State University Valedictorians Scholarship recipients. One group with ACT scores less than 24 is compared to a second group of Valedictorians with ACT scores

greater than or equal to 24 across two measurements, number of credit hours earned during the first academic year of postsecondary study and the cumulative collegiate grade point average earned during the same period. Statistical analysis concerning the number of hours completed and grade point average earned among two separate Valedictorian groups, those with ACT scores less than 24 and those with greater than or equal to 24, provided an assessment of postsecondary success between the two ACT groups.

Valedictorian status has not been formally established as a predictor of postsecondary success at Oklahoma State University. This research considered the Valedictorian Scholarship program as a unique tuition discounting honor that does not include ACT score as a deciding factor during the awarding process. Hundreds of students receive the scholarship each year, and any changes to the scholarship program could affect some students. However, findings in this research may provide direction for the Valedictorian Scholarship awarding methodology as well as other institutional scholarship programs offered at Oklahoma State University.

CHAPTER II

Review of the Literature

Introduction

Previous research qualifies the use of the traditional quantitative measurements of high school grade point averages, ACT scores, or SAT scores as methods of predicting postsecondary success (Bridges, 2001; Cowen & Fiori, 1991; Platt, Turocy & McGlumphy 2001). Julie Noble (2004) states “the use of standardized test scores and high school grades in college admissions increases the likelihood of academic success in college.” High school grade point averages provide some insight to a student’s postsecondary potential. But as a stand-alone methodology of admissions policy or scholarship awarding criterion, issues such as grade inflation among high schools, curriculum differences, and school types may raise the question of the reliability of using high school grade point averages as the sole basis for policy decisions (Bejar & Blew, 1981; Graves & Bolch, 1989; Ziomek & Svec, 1995, 1997; Zirkel, 1999). This notion is also found in a 1997 document from ACT, “high school grades have serious limitations.” National admissions testing programs also offer an academic snapshot of students, but admissions tests do not provide a perfect baseline for applicant selection policy (Paszczyk, 1994). As a measure of readiness for college, grade point averages combined with standardized tests scores are effective (Noble, 2004). This same idea should extend

to awarding scholarships or tuition waivers as well. However, the use of either grade point average or standardized test scores while excluding the other seems to disregard literature that suggests grade point averages and ACT or SAT scores together factor in the predictability of postsecondary academic suggest (Noble, 2004).

The Oklahoma State University Valedictorian Scholarship program does not consider ACT scores of Oklahoma's high school Valedictorians during the scholarship awarding process (Oklahoma State University Valedictorian Scholarship documents 2003). Without marginalizing the high school grade point averages of the Valedictorian Scholarship recipients, scores provided through participation in the standardized testing programs can offer additional academic information to admissions and financial aid officers. As David F. Lohman (2004) states, "the two most important purposes of admissions tests are to report on students' academic development and to predict the likelihood of their success in college."

This literature review attempted neither to endorse nor vilify the use of admissions testing as part of the Valedictorian Scholarship process. This review is simply offered to question why the ACT score is not considered as part of the Valedictorian Scholarship awarding process when previous findings suggest admissions testing programs and grade point averages do provide insight into potential postsecondary success of students (Noble, 2004; Platt, Turocy & McGlumphy, 2001).

History of American Admissions Testing

Nearly three million students participated in either the SAT, ACT, or both in 2004 (ACT, Inc. documents, 2004; College Board document, 2004). Though the ACT and SAT are sometimes used interchangeably, the tests are somewhat different in purpose and content, as well as scoring (Zwick, 2004). It is important to mention that SAT and ACT are no longer acronyms. The SAT, once the acronym for Scholastic Aptitude Test, is now called SAT, and ACT, known as American College Testing, is now called ACT (Zwick, 2004).

According to Zwick (2004) only 2% of American 17 year-olds were set in motion to receive college degrees in the early part of the twentieth century, but these college-bound students were subjected to individually-administered entrance examinations given by the students' college choices. This possibly required the college-bound student to sit for numerous admissions tests. Realizing the admissions testing process was cumbersome for students and colleges, the College Entrance Examination Board was formed in 1900 by an association of colleges and universities in the northeastern United States (Zwick, 2004). While individual college-based testing was a cumbersome process, colleges and universities were also concerned with inconsistent grading systems and curriculum standards among the high schools and preparatory schools sending students to higher education institutions (Zwick, 2004). The Board hoped to provide a uniform examination process, and aspiring college students would not face numerous individually administered entrance examinations (College Board, 2004).

Zwick (2004) noted the Board tests began as essay-styled examinations and evolved into the multiple-choice Scholastic Aptitude Test in 1926. The admissions examinations gained popularity during the 1930s and became an extremely efficient method of examining soldiers returning from World War II wishing to take advantage of the GI Bill and seek a college degree (Zwick, 2004). A merger of the testing services for the College Board, the Carnegie Foundation for the Advancement of Teaching, and the American Council of Education took place in 1947 and as a result, the Educational Testing Service (ETS) was created (Zwick, 2004).

The *College Bound Seniors Profile of SAT Program Test Takers* (2004) reported over 1.5 million participated in SAT examinations between April 2003 and April 2004. The College Entrance Examination Board also administers the Preliminary SAT (PSAT) and the National Merit Qualifying Test (NMQT), Advanced Placement (AP) and College-Level Examination Program (CLEP) tests.

According to Zwick (2004), the American College Testing Program was founded in 1959 by E.F. Lindquist from the University of Iowa, and ACT became a direct competitor to ETS. Zwick (2004) noted that the ACT was used widely in the Midwest and was an alternative to the SAT required by Eastern schools. While the SAT focused on verbal and math skills, the ACT considered four areas including English, math, reading, and science (Zwick, 2004).

The American College Testing Program changed its name to ACT in 1996. In 2004, 40% of the graduating high school seniors in the United States took the ACT examination (August 18, 2004 ACT National Data Release)

The Need for Quantitative Measures

Colleges and universities compete for students, and each college has a desire to meet annual enrollment goals with students who can meet the rigors of higher education with reasonable expectation of graduation. College admissions counselors have the task to review the records of high school students to determine those individuals who have the potential to meet the challenge of higher education and develop competencies associated with a college graduate (Steinberg, 2002). Admissions counselors traditionally use two primary quantitative methods to qualify individuals seeking college admission. Though the consideration of personal essays, questionnaires, and extra-curricular activities is part of some admissions processes, most colleges look at the admissions candidate's high school grade point average and ACT or SAT score when making admissions decisions (Breland, Maxey, Gernand, Cumming & Trapani, 2000). Top-tier institutions such as Harvard, Yale, Stanford, and Wesleyan University, among others with applicant pools exceeding the available freshman slots, use a more qualitative selection process when choosing a freshman class (Steinberg, 2002). However, Steinberg (2002) notes the high school grade point average and ACT or SAT scores remain a large part of the admissions process for highly selective colleges and universities.

Highly selective colleges and universities make admissions decisions using high school grade point averages, ACT or SAT scores, essays, interviews, and other qualifying information (Steinberg, 2002). This seems to suggest that such an intense selection process would find students with a high probability of success. As such, a college or university using both the standardized test score and grade point average would probably

see a higher success rate than a college selecting a student based solely upon grade point average or standardized test score alone (Noble, 2004; Platt, Turocy & McGlumphy 2001).

While the collegiate outcomes of higher order thinking, social skills, and problem-solving skills are possible measurements of postsecondary success, the student's grade point average is the quantified measurement of college classroom success. As certain personality traits and attributes may also assist in contributing to postsecondary success, most admissions decisions are based on high school grade point average and ACT or SAT scores (Breland, Maxey, Gernand, Cumming & Trapani, 2000).

Quantitative Measures Attesting Readiness for College

High school grade point averages and ACT or SAT scores are often considered the primary sources of assessing a student's readiness for college work. According to *Trends in College Admission* (2000), the most important factor in college admissions decisions between 1979 and 1999 was the student's high school grade point average or rank. This was followed secondly by national test scores.

In 2004, 69% of Oklahoma's graduating high school students participated in the ACT. According to the ACT, the composite score of Oklahoma's test takers has dropped from 20.8 in 2000 to 20.5 in 2003. In 2004, the composite score rose to 20.6. The ACT national average in 2004 was 20.9 (ACT documents, 2004).

Grade Point Average versus ACT or SAT Scores

Bejar and Blew (1981) believe the ACT or SAT score is the best predictor of college success. Bridges (2001) hinted at some limitations of the SAT but suggested “it is one of the most effective tools possessed by colleges and universities attempting to predict academic success.” Paszczyk (1994) reported that higher ACT scores yield a noticeable increase in college grade point averages. However, admissions tests do not solve all problems in the prediction of success. Paszczyk (1994) also reported an interesting observation as one entering class at Chicago State University with the highest overall ACT score had the lowest overall grade point average at the time of graduation.

A 1969 study at the University of Wisconsin at Stevens Point found low ACT scores (less than 20) accounted for most of the academic suspension at the University. However, the researchers found that low scores were not an absolute indicator and argued for using a combination of grade point average and ACT score as admissions requirements. California State University at Hayward found admissions criteria that included high school grade point average and admission test scores increased predictability of overall freshmen grade point averages (Cowen & Fiori, 1991). A similar finding supported the continued use of both high school grade point average and admissions testing score when making admissions decisions (Platt, Turocy & McGlumphy 2001).

A college graduate should show skill and competencies that may or may not be revealed in quantitative standards. Success in college may depend on student characteristics that the exclusive uses of quantitative indicators such as high school grade

point averages and entrance exams may not measure. Economic status, cultural issues, social issues, psychological, and personality traits are factors that influence success in college (Pascarella & Terenzini, 1991). The Valedictorian Scholarship status, however, is derived primarily from the quantitative measurement of high school grade point average. Other factors of personality, economic status, or culture may foster achievement, but grade point average is directly attributable to Valedictorian status.

The Valedictorian at Oklahoma State University

The purpose of this study was to determine if Oklahoma State University should have an expectation that Valedictorian Scholarship recipients, without ACT score consideration, will be successful when success is defined as first-year Valedictorian Scholarship recipients completing at least twenty-eight credit hours with a grade point average of 3.0 or greater during the first year of academic study. Oklahoma State University uses Valedictorian status as the only criteria for waiving a portion of tuition cost. While Valedictorian Scholarship recipients graduate from high school with high grade point averages, Oklahoma State University extends the Valedictorian Scholarship without considering any specific level of ACT score that may or may not compliment a Valedictorian's high school grade point average (Oklahoma State University Valedictorian Scholarship documents, 2003). The use of high school honors or awards does not appear in the literature as a causation of postsecondary academic success. Data provided by Oklahoma State University for this research revealed that Oklahoma State

University awarded over 1,800 Valedictorian Scholarships between Fall Semester of 1999 and Fall Semester of 2003 to first-year students without ACT score consideration.

High school grade point averages are often linked to another factor when predicting postsecondary success. One possible link is the ACT or SAT score (Cowen & Fiori, 1991; Platt, Turocy & McGlumphy, 2001). Kanoy, Webster, and Latta (1989) found that high school grade point average and academic self-concept could account for a high amount of variance in college grade point averages. Additional studies arising from this research may provide literature linking self-concept to Valedictorian Scholarship recipients and may offer some explanation as to why a Valedictorian, irrespective of ACT score, may find postsecondary success. A connection can be made between high grade point averages and Valedictorians and perhaps the connection can be continued from Valedictorian to academic self-concept, but academic self-concept is motivational and serves limited purposes for this study.

The Valedictorian Scholarship is a prestigious award offered by Oklahoma State University. When the scholarship is awarded, the student holds tangible proof that academic excellence was achieved in high school. A high grade point average is the result of consistent academic success, and consistent academic success may promote confidence. Self-efficacy is the belief in personal abilities to succeed (Bandura, 1977; Purkey, 1988). It is possible that a recipient of a prestigious award may persist in academic endeavors. Perhaps past success promotes future success. The slate is cleared once admission to college is granted and scholarships are awarded. High school grade point averages and ACT scores have little meaning once the freshman year at college begins. However the status of receiving the Valedictorian Scholarship may provide the

recipient additional confidence that postsecondary success is within reach. Self-efficacy provides a platform for additional study of successful Valedictorian Scholarship recipients. While Bandura's (1977) belief that personal conviction may build a desire to succeed is an interesting concept, and it may serve well in understanding Valedictorian Scholarship success, the purpose of this research is focused in finding if Valedictorian Scholarship recipients, regardless of ACT score, attain postsecondary academic success.

High School Differences Affecting Grade Point Averages

Oklahoma State University has a diverse student population; however, a high percentage of the 2004 entering freshmen class came from rural Oklahoma (Oklahoma State University Student Profile, 2004). Edington and Koehler (1987) determined little difference between urban and rural students, but found rural students have less access to education information. Howley (1994) reported there were educational advantages offered by small schools. While students from smaller schools are capable of coursework done by students from larger schools, smaller schools, in general, cannot offer the variety of higher level secondary courses that larger schools can afford. Thus, the students from smaller schools may not be as well prepared for college as students from high schools with broader academic offerings (Graves & Bolch, 1989). In these cases, a high school grade point average may not be a good indicator of future academic success.

While the small or rural school may have its limitations, it also has benefits not always found in larger high schools. The rural school setting may provide a more nurturing setting for education achievement (Edington & Koehler, 1987). Such a setting

may provide for greater persistence in educational pursuits (Howley, 1994). Teachers in rural school may not have the opportunity to become specialized in particular areas as might teachers in rural schools, but the rural teachers are effective (DeRee, 1986).

High School Curriculum Rigor

A rigorous high school curriculum can serve as a springboard to postsecondary work as courses taken in high school contribute to academic success in college (Orlowsky-Yuskis, 2000). It seems likely that higher level math and language courses, as well as courses that cause the student to acquire and develop reasoning skills, will increase opportunity for collegiate success, but there may be a trade-off. Higher-level courses in high school may reduce the high school grade point average (Roth, Crans, Carter, Ariet & Resnick, 2000). This becomes a confounding issue as a student with lower high school grades in tough higher-level courses may actually be better prepared for the college curriculum than students with higher marks in less challenging high school assignments (Roth et. al., 2000). Learning may be secondary to grade point averages. According to ACT (2004), students that participated in college core preparation courses scored on average 2.5 points higher on the ACT composite score.

Other high school course offerings and academic-based extra-curricular activities outside of mathematics, science, and languages may also improve chances of success in a postsecondary setting. Some research has been conducted on whether high school communication courses or competencies influence college success. Rubin and Graham (1988) found that communication competence shows a positive influence on college

grade point averages. Also, academic-based extra-curricular activities may serve as a predictor of higher education success. Dvorak (1986) found that high school newspaper work correlated with higher grade point averages in college.

It appears difficult to predict college success exclusively upon high school grade point averages. Some course choices in high school curriculum may serve to raise a student's high school grade point average, but the student may not be as prepared for college entrance exams and, consequently, postsecondary work (Roth, et. al., 2000). Secondly, curriculum rigors among various high schools may differ. It is difficult to conceive that courses, academic rigor, effectiveness, and creativity are uniformly available to all high school students across the United States (Noble, 2004). Likewise, it is difficult to conceive that similar high school grade point averages in one school reflect the same mastery of academic skills that a similar grade point average reflects at another school (Noble, 2004). Thus, grade point averages may fluctuate from state to state, district to district, and school to school.

Grade and ACT/SAT Score Inflation

Perry A. Zirkel (1999) defines grade inflation as “a rise in academic grades not accompanied by a commensurate increase in academic achievement.” Bejar and Blew (1981) reported the SAT is a better predictor of postsecondary success because of concerns with the reliability of high school grade point averages. Research has also found that high school grade point averages may be inflated. Different studies, 17 years apart, note that admissions test scores are declining while high school grade point averages are

simultaneously rising (Bellott, 1981; Ziomek & Svec, 1995, 1997). Thus, an overstatement of grade point averages possibly exists.

From 1972 to 1993, the percentage of “A” or “B” students rose from 28.4 percent to 83 percent (Leo, 1993). Conley (2000) found that student proficiency in a particular subject and the grade the student received may be not be necessarily related since grading systems and proficiency tests measure academic achievement differently. Conley believed this finding suggests that grade inflation may exist.

An article by Newcomb (2000) compared Simsbury High School in Connecticut with 27 other high schools of the same approximate size in the same area. Simsbury scored fourth in SAT scores among this group of schools, but Simsbury was 26th in the number of students with an “A” average. Newcomb (2000) alluded the education students were receiving at Simsbury was rigorous, but the grade point averages were causing some elite colleges and universities to overlook the Simsbury students during the admissions process. Simsbury High School has since been forced to market itself to colleges as a school with high grading standards since the number of Simsbury students accepted by top-tier colleges fell in 1997 and had not recovered by 2000 (Newcomb, 2000).

Some researchers believe grade inflation does not exist to a very high degree (Bracey, 1994; Viadero, 2001). However, according to the College Board, average math scores on the SAT fell from 530 in 1972 to 505 in 1993, but the number of high school students with “A” or “B” averages increased by nearly 55 percent during the same period (Leo, 1993).

Concerns over the possibility of grade inflation may tend to make admissions officers view the ACT or SAT score as the best method by which to make admissions

decisions (Zirkel, 1999). However, in 1996, the College Board decided to “recenter” SAT scores. Recentering was done so that math and verbal scores each averaged near 500. Since the recentering, the number of perfect SAT scores went from 11 in 1986 to 587 in 2001 (Seligman, 2002). ACT reported that composite scores rose in 2004 to 20.9. This was the first composite score increase since 1997 (ACT documents, 2004)

Summary

As most college and university admissions officers try to fill seats with incoming freshmen, literature appears to be convoluted on whether the ACT/SAT score or high school grade point average is a better predictor. The combined use of national test scores and high school grade point averages may be the selection method of choice for postsecondary admission (Noble, 2004). Other methods of selection may also be used, but time and money and the mission of the college may direct the admissions officers to rely upon standard quantitative measurements of grade point averages and national test scores as the gateway to college entrance.

It is also difficult to determine if grade point averages or national tests fare better in predicting success. However, an assumption is made that those students named Valedictorian have been successful in the classroom. This assumption is appropriate because a Valedictorian has completed high school with a 4.0 grade point average, named first-in-class, and certified by the high school of attendance as “Valedictorian.” The Valedictorian at Oklahoma State University has provided proof of Valedictorian Status and is given a scholarship award by the University. Neither ACT nor SAT score is

required for the Valedictorian award, as opposed to the other scholarship programs at Oklahoma State University.

Grade point average is only a single measurement of success, but this measurement of success is the result of the culmination of years of classroom success by the Valedictorian. Regardless of ACT score, the Valedictorian has sustained academic performance in high school, and this success may well extend into postsecondary success. Why? Perhaps academic self-concept, confidence in ability, or many other personality traits and environmental factors may create an expectation of success that perpetrates success (Bandura, 1977; Purkey, 1988). The focus of this study surrounds the issue of whether Valedictorians, regardless of ACT score, are successful in college, not why the Valedictorians are successful. Future research can focus on the reasons why a Valedictorian may succeed, and this would be important research. Discovering the rationale for Valedictorian success could give birth to programs that teach academic qualities of Valedictorian scholars to students academically at-risk.

While the grade point average measures the full academic career of a student, the ACT or SAT score attempts to summarize ability in a single test given on a single day. The student's ACT or SAT score may not indicate any true measurement of academic ability. A high ACT or SAT score probably indicates above average intelligence, but a single point-in-time measurement may not adequately consider the full range of academic ability or student persistence. Thus, grade point average along with ACT or SAT scores may be increase the likelihood of predicting postsecondary success (Noble, 2004).

Considering grade point average without test scores does not adequately describe a student or the student's potential for success. While there may be success stories of high

school students with marginal grades and low test scores graduating with academic honors, there may be those students with similar backgrounds who did not succeed. Stories probably can be told of high school students with stellar academic backgrounds that fail in college as well as those high achievers that continue excellent work in college. Grade point averages between schools are different (Zirkel, 1999). Rural schools averages may or may not be comparable to urban or larger school averages (Graves & Bolch, 1989). Tough curriculums may result in lower grade point averages but provide better preparation for college work (Newcomb, 2000). Possibly the biggest indictment is the findings that grade point averages may be inflated (Leo, 1993).

Oklahoma State University offers \$1,250 in scholarship funds per academic year to Valedictorian students who are only evaluated on their high school grade point average and Valedictorian certification. The findings of this research may direct scholarship awarding policy for the Oklahoma State University Valedictorians Scholarship program as well as other institutional scholarship programs.

CHAPTER III

Methodology

The purpose of this study was to determine if Oklahoma State University should have an expectation that Valedictorian Scholarship recipients, without ACT score consideration, will be successful when success is defined as first-year Valedictorian Scholarship recipients completing at least twenty-eight credit hours with a grade point average of 3.0 or greater during the first year of academic study. Oklahoma State University traditionally awards Valedictorian Scholarships to students with high school Valedictorian status regardless of ACT score (Oklahoma State University Valedictorian Scholarship documents, 2003). Since scholarships or tuition discounts are offered to Valedictorian students, it is important to evaluate the postsecondary achievement of Valedictorians.

Once admitted into Oklahoma State University a student may submit additional academic, extra-curricular, community service, financial or other information in order to be considered for University-funded scholarships. Most academic-based scholarships require the student to have at least a 24 ACT score; however, an applicant may submit certification attesting to Valedictorian status in which case the ACT score requirement is waived. This certification is provided by the high school or school district of the applicant (Oklahoma State University Valedictorian Scholarship documents, 2003), and this certification will systematically create a Valedictorian scholarship offer to the student

regardless of the student's recorded ACT score. While literature suggests that a combination of high school grade point average and standardized test scores provide a better evaluative method of determining success (Noble, 2004), Oklahoma State University chooses to award Valedictorian scholarships to students from the state of Oklahoma who achieved valedictorian status as certified by their high school or district of attendance regardless of ACT score.

Sample of the Study

This study compiled a sample of Valedictorian freshmen at Oklahoma State University enrolling for the first time during the period including Fall semesters of 1999, 2000, 2001, 2002, and 2003. This sample was considered to be representative of the larger population of Valedictorian freshmen from the broader timeframe. The postsecondary success measurements of the total number of credit hours completed and cumulative postsecondary grade point average earned was taken at the end of the Summer Semester following the Fall semester of first matriculation.

Table 1

Term of Enrollment and Semester of Success Measurement

First Semester of Enrollment	Semester of Success Measurement
Fall 1999	Summer 2000
Fall 2000	Summer 2001
Fall 2001	Summer 2002
Fall 2002	Summer 2003
Fall 2003	Summer 2004

The number of subjects meeting the criteria of first-time, freshman Valedictorian Scholarship recipients during the five year period was $N = 1,807$. However, the sample studied was 1,793. Fourteen subjects were subsequently eliminated from the original sample. Four valedictorian students had no ACT score on record, and ten valedictorians had earned no academic credit (zero hours completed and a 0.00 grade point average) during the time period sampled. Since many students are admitted and awarded scholarships but fail to begin classes, it is likely that these ten Valedictorians excluded with no academic credit were “no-shows” or withdrew from the University during the first few weeks of their first semester. It is also possible that some members without earned hours or a recorded grade point average failed all classes attended.

The Valedictorian sample was sub-divided into two groups. The groups were separated by placing Valedictorian Scholarship recipients with a composite ACT score < 24 into group one (low group) ($n = 476$). A second group ($n = 1,317$) was comprised by placing Valedictorians with ACT scores ≥ 24 into group two (high group). The

subdivision by ACT score is a natural break. With few exceptions, Oklahoma State University does not often consider an applicant with a composite ACT score less than 24 as eligible for University-sponsored academic scholarships (Oklahoma State University Scholarship documents, 2004). Specific success measurements, such as the number of credit hours completed and cumulative postsecondary grade point average earned, provided a unique comparison of collegiate achievement between low ACT (group one) and high ACT (group two).

Data Collection

The data extracted from the records of the sampled Valedictorian subjects consisted of the composite ACT score of the Valedictions. Along with the ACT scores, the grade point average earned during the first year of academic study from the first Fall semester of matriculation through the subsequent Summer Semester was extracted, as was the number of credit hours earned during the same time period.

Sampling

After receiving approval from the Oklahoma State University Office of Research Compliance, data for this test was requested from Oklahoma State University's Office of Institutional Research and Information Management. The data request asked for the highest composite ACT score on record, grade point average at the end of the student's first calendar year of enrollment (Fall through Summer), and number of credit hours completed at the end of the first calendar year of enrollment (Fall through Summer) for those students who received a Valedictorian Scholarship as an entering freshmen between

the years of 1999 and 2003. While personal academic information was used in this study, information that personally identified academic information with a specific subject was stripped by the Office of Institutional Research and Information Management, and any data used in this study cannot be identified to any individual. All personal identifiers such as name, social security number, or other information that may identify an individual cannot be matched with academic information extracted during the data examination. The data remained protected at all times during the study as suggested by Creswell (2002).

After excluding the aforementioned fourteen subjects, the two ACT groups (low and high) comprise the sample ($N = 1,793$) of first-year Valedictorians Scholarship recipients who entered Oklahoma State University between 1999 and 2003. Group one (low ACT group) was comprised of Valedictorian Scholarship recipients with ACT scores < 24 , and group two (high ACT group) was comprised of Valedictorian Scholarship recipients with ACT scores ≥ 24 .

Research Question One

Are the mean number of hours completed between group one different from group two? The first test performed was an independent sample *t*-Test. This test compared the mean number of credit hours completed between the low ACT group one and the high ACT group two. This test determined whether a difference in the number of hours completed existed between group one and group two at the end of the first year of postsecondary work.

Research Question Two

Is the mean postsecondary grade point average for group one different from group two? The second test performed was an independent sample *t*-Test. This test compared the mean grade point average between low group one and high group two. This test determined whether a difference existed between low ACT group one and high ACT group two at the end of the first year of collegiate study.

Research Question Three

What is the relationship between group membership and the variables? The third question addressed the relationship between ACT group membership (high or low) and student success defined as having a grade point average of at least 3.0 and completing at least 28 credit hours during the first year of postsecondary study. It is possible for a subject to be successful in credit hours completed by earning 28 credit hours without reaching the 3.00 success threshold of postsecondary grade point average. It is also possible for a subject to reach the 3.00 postsecondary grade point average threshold without meeting the credit hours completed requirement of 28. Thus, it was important to perform a cross tabulation of the overall success of group one and group two. A Chi square test was administered to determine if success or non-success occurred more frequently among low ACT group one or high ACT group two. This test compared the proportions actually observed in the study. This test considered Valedictorian Scholarship

recipients completing 28 credit hours with a postsecondary grade point average of at least 3.00 to be classified as successful.

Summary

A sample ($N = 1793$) of Valedictorian Scholarship recipients was extracted from Oklahoma State University entering freshmen classes between 1999 and 2003. The Valedictorian Scholarship recipient population was subdivided into groups consisting of students with ACT scores < 24 (group one) and $ACT \geq 24$ (group two). At the end of the first-year of collegiate study, the postsecondary grade point average and completed hours of the Valedictorian Scholarship recipients were analyzed using independent t -Tests and Chi square calculations.

Chapter IV

Results of the Study

Description of the Sample

High school Valedictorian students, upon entering Oklahoma State University, are offered a Valedictorian scholarship regardless of the composite ACT score of the Valedictorian. If a Valedictorian Scholarship recipient completes the first year of postsecondary academic study with at least 28 earned hours with an overall postsecondary grade point average of 3.00 or higher, the Valedictorian is considered successful. While the composite ACT score is not considered during the scholarship awarding process, an analysis between Valedictorians of low ACT scores (< 24) and high ACT scores (≥ 24) provided comparisons of the first year's academic performance of the two independent ACT groups. The descriptive statistics for the two ACT groups are contained in table 2.

Table 2

Descriptive Statistics of the Valedictorian Groups

Group	Population	Mean ACT	Mean Hour Completed	Mean Postsecondary Grade Point Average
Low ACT	476	21.54	28.38	3.23
High ACT	1,317	26.43	29.20	3.43
Total	1,793	25.14	28.98	3.38

Research Question One

Are the mean number of hours completed by low ACT group one different from high ACT group two? In order to test for the difference between the low ACT (group one) and the high ACT (group two), an independent samples *t*-test was performed on hours completed. The difference was found to be statistically different, $t(1,791) = -3.43$, $p = .001$. Effect size was calculated for the two independent groups. Cohen's *d* calculation for effect was $-.16$, in the range of a small effect (Cohen, 1988).

Research Question Two

Is the mean post-secondary grade point average of low ACT group one different from high ACT group two? In order to test for the statistical significance of the mean differences between the low ACT (group one) and the high ACT (group two), an

independent samples *t*-test was performed on grade point average achieved at the end of the Valedictorian Scholarship recipient's first year of postsecondary study. The difference was found to be statistically different, $t(1,791) = -7.44$, $p = .001$. Effect size was calculated for research question two. Cohen's *d* calculation for effect was .40 in the range of medium effect (Cohen, 1988).

Research Question Three

What is the relationship between group membership in group one (low) and group two (high) and the variables of credit hours completed and postsecondary grade point average earned? The third question addressed the relationship between ACT group membership (high or low) and the overall student success defined as having both a grade point average of at least 3.0 and completing at least 28 credit hours during the first year of postsecondary study. Consequently, the success variable was also operational in the form of a dichotomous variable. The two-way classification table for subjects on these two variables is summarized in Table 3.

A Chi-Square test was performed, and the frequency distribution is reported in Table 3. Results were found to be statistically significant, $\chi^2(1) = 28.98$, $p = .001$.

Table 3

Frequency of Achievement

Group	Non-Success	Success	Total
Low ACT Group < 24			
Count	160	316	476
Group %	33.6%	66.4%	100.0%
Category %	36.1%	23.4%	26.5%
% of Total	8.9%	17.6%	26.5%
High ACT Group \geq 24			
Count	283	1,034	1,317
Group %	21.5%	78.5%	100.0%
Category %	63.9%	76.6%	73.5%
% of Total	15.8%	57.7%	73.5%
Total			
Count	443	1,350	1,793
Success	24.7%	75.3%	100.0%
Category %	100.0%	100.0%	100.0%
% of Total	24.7%	75.3%	100.0%

The frequencies reported in Table 3 provide a side-by-side comparison of the success encountered by the low ACT group and the high ACT group. The high ACT group comprised 73.5% of the total number of Valedictorian Scholars, and the low ACT group made up 26.5% of the total Valedictorian Scholarship recipients in this study. However, the high ACT group saw 78.5% successfully complete the first academic year with the prescribed completion of at least 28 credit hours with a grade point average of 3.0 or higher, compared to 66.4% of the low ACT group.

Summary

While the mean scores of postsecondary grade point averages and hours earned for subjects in both ACT groups were above the individual category success thresholds (postsecondary grade point average ≥ 3.0 and hours earned ≥ 28), two separate *t*-test calculations revealed statistical differences between the high ACT group and the low ACT group for grade point average and hours earned. The *t*-test for hours completed calculated $t(1,791) = -3.43$, $p = .001$. A subsequent calculation of Cohen's *d* indicated a small effect (Cohen, 1988). The *t*-test for postsecondary grade point average earned calculated $t(1,791) = -7.44$, $p = .001$ with a Cohen's *d* indicated medium effect.

A Valedictorian Scholarship recipient is considered successful if the student completes at least 28 credit hours with an overall grade point average of at least 3.00. Chi-Square tabulation was conducted to find the frequency of success of members of both low and high groups and was found to be statistically different. As 78.5% of group two (high ACT group) were successful in credit hours completed and grade point average earned compared with 66.4% of group one (low ACT group), it appears that high ACT Valedictorian Scholarship recipients succeed at a greater percentage than low ACT Valedictorian Scholarship recipients in the combined categories of credit hour completed and postsecondary grade point average earned. Descriptive statistics also suggest that high ACT group members complete more credit hours with a higher postsecondary grade point average than low ACT group members.

CHAPTER V

Summary of the Research

The purpose of this study was to determine if Oklahoma State University should have an expectation that Valedictorian Scholarship recipients, without ACT score consideration, will be successful when success is defined as first-year Valedictorian Scholarship recipients completing at least twenty-eight credit hours with a grade point average of 3.0 or greater during the first year of academic study. This study is important because institutional scholarship policy changes could be affected by the findings of this research or future research could be sparked by this study. Though conclusions drawn from this study could primarily affect the use or nonuse of the ACT score in the awarding criteria for the Valedictorian Scholarship program, other institutional scholarship programs may change the how the ACT score is factored during the scholarship awarding process.

Grade Point Average Verses National Tests

The ACT score is one of the scholarship award determinates for most Oklahoma State University scholarships, and the question arises as to why the ACT score is excluded during the Valedictorian Scholarship awarding process (Oklahoma State University Valedictorian documents, 2003) . The high school academic career of the

Valedictorian shows protracted academic success. This Valedictorian honor could indicate a persistence that may not be found through national testing programs, and perhaps theories of self-concept and self-efficacy suggest the label Valedictorian speaks for itself and past academic success influences or predicts future success (Bandura, 1994; Purkey, 1988). The ACT and SAT, on the other hand, provide a score from a comprehensive national test. Some literature suggests that the ACT and SAT provide the better gauge in predicting postsecondary success (Bejar & Blew, 1981). Some literature questions the legitimacy of the high school grade point average by suggesting that perhaps a 4.00 high school grade point average may not be the same among all students. Independent studies suggest systematic grade inflation and high school curriculum rigor differs from school to school (Bejar & Blew, 1981; Conley, 2000; Zirkel, 1999). Thus the likelihood that all 4.0 grade point average students stand on equal academic footing may be remote. Literature does not offer much solace for proponents of the ACT or SAT. National tests may also be affected by inflated scoring (Seligman, 2002).

Considering the ACT

Some researchers suggest that evaluating the potential academic success of a student transitioning from high school to college may consider both the high school grade point average and national test score (Platt, Turocy, & McGlumphy 2001). Jacques Steinberg in *The Gatekeepers* (2002) reported the painstaking tasks that admissions officers face while seeking to fill the freshmen class of a prestigious university. The admissions officers mentioned by Steinberg (2002) carefully considered test scores, grade

point averages, extra-curricular activities, essays, and interviews before making any final admission decisions. The added information offered to the admissions officers brought unique perspectives of the student seeking admission into Wesleyan University. The Wesleyan admissions officers were confident in the potential success of the students selected. Steinberg (2002) possibly suggested a point that may relate to Valedictorian Scholarship recipients at Oklahoma State University. If information is available and the information provides insight into the academic abilities of the student, all information should be considered when making an admissions or scholarship decision.

The fact remains that scholarship resources are scarce, and leveraging scarce scholarship funds with those students that are most likely to succeed is important. If research suggested that ACT scores were an indicator of Valedictorian Scholarship recipient success, it would be remiss of Oklahoma State University to forego ACT score consideration when awarding Valedictorian scholarships.

Testing the Valedictorian Scholarship Recipients

The 1,793 Oklahoma State University first-year Valedictorian Scholarship recipients matriculating between Fall of 1999 and Summer of 2003 were placed into two separate groups. Group one was populated with 476 Valedictorians with composite ACT scores < 24 . Group two was populated with 1,317 Valedictorians with composite ACT scores ≥ 24 . The ACT score of 24 was as used as the boundary since other scholarship programs at Oklahoma State University require at least a 24 before a scholarship award is extended.

T-Test Analysis

Two independent *t*-tests were conducted on low ACT group one and high ACT group two comparing number of hours completed and postsecondary grade point average earned during the first year of the Valedictorian Scholarship recipient's first year of collegiate study. Both tests reported a statistical difference between the groups.

The *t*-test of hours completed was $t(1,791) = -3.43, p = .001$. Effect size was calculated for the two independent groups. Cohen's *d* calculation for effect was $-.16$, in the range of a small effect (Cohen, 1988). The *t*-test of postsecondary grade point average earned reported, $t(1,791) = -7.44, p = .001$. Effect size was calculated for research question two. Cohen's *d* calculation for effect was $.40$ in the range of medium effect as stated by Cohen (1988).

Chi Square, Frequencies, Descriptive Statistics

A third test considered group membership and the overall success of group one and group two. While Valedictorian Scholarship recipients could complete the necessary hour requirement and fail to reach the 3.00 grade point average mark or fail to complete at least 28 hours while meeting the 3.00 grade point average requirement, a Valedictorian was not considered successful unless both hours completed met or exceeded 28 and the grade point average met or exceeded 3.00. It was necessary to compose a frequency table noting the distribution of group membership within the successful and non-successful

categories. A χ^2 test was performed, and results were found to be statistically significant, $\chi^2 (1) = 28.98, p = .001$.

Table 4

Group Membership and Successful/Unsuccessful Totals

Group	Population	Successful	Unsuccessful
Low ACT Group	476	316	160
High ACT Group	1,317	1,034	283
Total	1,793	1,350	443

Table 4 shows 1,350 Valedictorian Scholarship recipients, regardless of ACT group membership, successfully completed 28 or more credit hours with a grade point average meeting or exceeding the 3.00 threshold. This compares to 443 non-group descript Valedictorian Scholarship recipients failing to meet the overall academic success criteria of completing at least 28 credit hours with a minimum 3.00 grade point average. Upon successful completion of the academic year, the Valedictorian Scholarship award is renewed for a second year. Of the 1,793 participants in this study, three of every four Valedictorian Scholarship recipients, regardless of ACT score, were eligible to renew the scholarship award for a second year.

Table 5

Descriptive Statistics of the Valedictorian Groups

Group	Mean ACT	Mean Hours	Mean GPA
Low ACT	21.54	28.38	3.23
High ACT	26.43	29.20	3.43
Total	25.14	28.98	3.38

The comparison of the Valedictorian Scholarship recipients with ACT scores < 24 (low group) with Valedictorians with ACT scores ≥ 24 (high group) revealed that the high ACT group showed an advantage in completing more hours with a higher cumulative grade point average as referenced in Table 5. However, the low group was also competitive.

The success measurement of credit hours and postsecondary grade point average was concerned only with meeting or surpassing the 28 credit hours with an overall grade point average of 3.00, Table 4 notes that 316 of the total low group population ($n = 476$) met or exceeded the success criteria. This shows that a majority of students with an ACT score < 24 are meeting the success factors that will ensure the continuation of the Valedictorian Scholarship for a second year.

Other Findings

Interesting information can be found when various pieces of data are extracted and examined. Two examinations looked at the success of participants with the highest

recorded ACT score and the participant with the lowest recorded ACT score. The participant with the lowest recorded ACT score had a composite ACT score of 16. Two participants had the highest recorded ACT score of 30. While no information in the study could reference the scores of any participant with personally identifiable information, it seemed appropriate to look at the success or non-success of the lowest and highest recorded ACT scores in comparison to descriptive statistics of the various ACT groups.

Lowest Recorded ACT Score

While the methodology of this study focused upon data analysis of members of low ACT group one and high ACT group two, it is important to remember that computing and comparing averages of groups does avoid, as it is intended, the consideration of individual performances. Table 6 takes note of the Valedictorian Scholarship recipient with the lowest recorded ACT score and draws a comparison to the high and low ACT group scores as well as to the highest recorded ACT scorers in the study. The participant with the lowest recorded ACT score performed in hours completed and grade point average at levels higher than either ACT group. The low scorer also outperformed the average scores of the two highest ACT scorers in the study. The low scorer's result may be atypical, but an admissions or scholarship policy that excludes low ACT scorers would exclude Valedictorians that may have been otherwise academically successful.

Table 6

Descriptive Statistics of the Valedictorian Groups

Group	Mean ACT	Mean Hours	Mean GPA
Lowest ACT			
Participant	16.00*	31.00*	3.77*
Highest ACT			
Participant (2)	30.00	30.50	3.11
Low ACT	21.54	28.38	3.23
High ACT	26.43	29.20	3.43
Total	25.14	28.98	3.38
*exact score, hours, GPA			

Distribution of the ACT Scores among the Groups

Tables 7 and 8 display the ACT score distribution among the groups. The distribution of ACT scores among the low group revealed that 59.1% of group one had a recorded ACT score of either 22 or 23. Thus, the low group was heavily weighted with scores at or near the ceiling defined during the course of the research. Conversely, the distribution of ACT scores among the high group revealed a seemingly level frequency of recorded scores with the noted exception of the high score of 30.

Table 7

ACT Distribution of Valedictorians in Low Group (Group One)

ACT Score	Frequency	Percentage of the Total
16	1	.2
17	4	.8
18	12	2.5
19	36	7.6
20	53	11.1
21	89	18.7
22	121	25.5
23	160	33.6
Total	476	100%

Table 8

ACT Distribution of Valedictorians in High Group (Group Two)

ACT Score	Frequency	Percentage
24	213	16.2
25	239	18.1
26	214	16.2
27	244	18.5
28	234	17.8
29	171	13.0
30	2	.2
Total	1317	100%

Conclusion

In this study, 1,034 of first year Valedictorian Scholarship recipients during the five year period from Fall 1999 through Fall 2003 with an ACT score ≥ 24 met or exceeded success criteria by completing at least 28 credit hours with a postsecondary grade point average meeting or exceeding 3.00. The high ACT group (≥ 24 ACT) statistically outperformed members of the low ACT group (< 24 ACT) by completing more hours during the academic year with higher postsecondary grade point averages. However, findings do not convincingly support a change in the Valedictorian Scholarship awarding criteria. Though the high ACT group completed more hours with a higher

postsecondary grade point average than the low ACT group, 316 of the low ACT group's membership met the overall success criteria. This study supports literature (Cowen & Fiori, 1991; Noble, 2004; Platt, Turocy & McGlumphy, 2001) that posits standardized tests scores combined with high school grade point average may play some role in predicting post-secondary performance. This study does not suggest that standardized test scores are better predictors of postsecondary success than high school grade point average for Oklahoma State University Valedictorian Scholarship recipients. However, standardized test scores may provide information about a student's potential that grade point averages alone cannot provide.

The study revealed that first-year Valedictorian Scholarship recipients, regardless of ACT group affiliation (high or low) are successful 75% of the time in completing requirements to receive a Valedictorian Scholarship continuation. However, additional studies that compare academic success rates of Valedictorian Scholarship recipients in high or low ACT groups with the success rates of high or low ACT groups of the general student population may determine how well Valedictorians in high or low groups performed in relationship to the Oklahoma State University student population as a whole. If Valedictorian Scholarship recipients show greater success rates than the total student population, qualitative studies may consider looking into commonalities among successful Valedictorians.

Gooding (2001) notes that family factors such as socioeconomic status, educational level of parents, as well as family structure affect test scores and academic success in college. Klimovich (1995) suggests that understanding a student's pre-college background helps the student transition into college. Perhaps additional qualitative

studies of Oklahoma State University Valedictorian Scholarship recipients may support the findings of Gooding and Klimovich. Discovering specific themes among successful Valedictorians may help develop mentoring programs or academic services that could help Valedictorian Scholarship recipients as well as students from the general student population that are academically at-risk. The discoveries found through future research may show that teaching simple strategies such as study skills and self-management suggested by Tuckman (2003) may provide the bounce needed to succeed.

Impact upon the Literature

This study focused on Valedictorian Scholarship recipients at Oklahoma State University, and any application of the findings of this study must consider two important points: (1) Valedictorian Scholarship recipients have high school grade point averages that are associated with a high degree of academic success, and (2) postsecondary success for this study was defined as completing at least 28 credit hours with at least a 3.00 grade point average. Valedictorian Scholarship recipients with ACT scores ≥ 24 did meet the success mark and outperformed Valedictorian Scholarship recipients with ACT scores < 24 . The findings of this study support the use of composite ACT scores as a method of predicting postsecondary success for Oklahoma State University Valedictorian Scholarship recipients.

ACT scores, as found in this study, provide valuable information when attempting to predict postsecondary success. However, this study does not mitigate the importance of high school grade point average and its ability to forecast success in college. It is quite

the contrary. A Valedictorian Scholarship recipient at Oklahoma State University receives a scholarship based upon receiving one of the highest academic honors a high school may bestow upon their graduates, and grade point averages are the primary factor in determining Valedictorian status. While facts may be argued that high school grade point averages may be inflated, the facts cannot be denied that Valedictorians were academically successful while in high school. Yet Valedictorians with higher ACT scores (≥ 24) were successful to a greater degree than Valedictorians with ACT scores less than 24 as reported in this study.

This study only adds to the debate between those that may believe the ACT score is a better predictor of postsecondary success and those who believe grade point average is a better predictor. This study did find that Valedictorians with ACT scores ≥ 24 earned, on average, a higher postsecondary grade point average and completed a higher number of credit hours of course work than Valedictorians with ACT scores < 24 . However, the average grade point average and credit hours completed by the low ACT group (< 24) were above the study's defined success threshold of 3.0 grade point average and 28 hours completed.

Gateway to Future Research

The Valedictorian designation means different things to different high schools and school districts. Though the phrase "Valedictorian" does seem to embody those characteristics of academic success, future researchers exploring this topic may wish to define "Valedictorian." Through interviews and record examinations, researchers might

find common threads that may more adequately describe the Valedictorian Scholar. Information such as coursework taken in high school, extra-curricular participation, and admission testing scores may provide additional academic insight which grade point averages fail to explain.

A researcher may wish to identify the different methodologies that Oklahoma high schools or school districts choose in selecting Valedictorians. While local school boards are autonomous and are well within their right to establish Valedictorian policies for their individual schools and systems, publishing the awarding methodologies may cause some school systems to rethink Valedictorian awarding policies. Scholarly publications may direct the state school board to offer general guidelines for Valedictorian recognition.

A study may be conducted that examines the Oklahoma State University Valedictorian Scholarship recipients from high schools presenting multiple Valedictorians. Such a study could consider the high school of the Valedictorian scholars, ACT scores and if a relationship to postsecondary success exists between the high school and ACT scores. This study could compare the high schools of the Valedictorians and success rates and possibly identify the high schools that provide Valedictorians to Oklahoma State University with better college preparation.

Impact upon Policy

The Valedictorian Scholarship is a popular program at Oklahoma State University. Many students have benefited financially from the generous institutional

scholarships. Dismantling the Valedictorian Scholarship program in any fashion will, more likely than not, exclude students, and these programmatic changes may cause these same students to consider attendance at other colleges or universities.

This research does suggest that Valedictorian Scholarship recipients with high ACT (≥ 24) scores do meet or exceed the success threshold defined in this study to a greater extent than students with lower ACT scores (<24). However, does this research suggest instituting an ACT score requirement on Valedictorian Scholarship awards? The 12 percent gap between the low group ACT (<24) success and the high group (≥ 24) success does not appear to show a substantial gap in achievement that would warrant ACT score consideration. It is important to remember that over 66 percent of the low ACT group was successful. If the success rate for the low ACT group was below 50%, perhaps a stronger case could be made to consider the ACT score before Valedictorian Scholarships are offered.

There are options. Perhaps the Valedictorian Scholarship program may consider reducing the current \$1,250 annual award for students with an ACT score < 24 . If the student completes the first year of academic study meeting the 3.00 grade point average and earning 28 credit hours, the scholarship award could be increased the second year to \$1,250.

This study does suggest that scholarship policies should be reviewed each year. The Valedictorian Scholarship program should continue to examine the ACT scores of its recipients on an annual basis. If a trend develops that shows a lowering success rate among scholarship recipients with low ACT scores, the ACT score criterion must be reconsidered.

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RE: IRB Application #ED-05-4

Dear Bob *Bob*

Your recent IRB application does not require IRB review. If you have checked "yes" on your Plan of Study regarding research with human subjects, this should be changed to "no". Archival data with identifiers stripped before you see them are exempt from any level of IRB review.

Sincerely,

A handwritten signature in cursive script that reads "Carol Olson".

Carol Olson, Chair
Institutional Review Board

CO:dj

VITA

Robert E. Dixon

Candidate for the Degree of
DOCTOR OF EDUCATION

Dissertation: THE OKLAHOMA STATE UNIVERSITY VALEDICTORIAN
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