

Belmont University

Oh, To Be a Scholar!

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Abstract

College has historically been an essential part of our society. Most parents dream of their child attending the best schools in the country, and they will go to any length to achieve this goal. This journey starts with the question: where do I send my child to school? Over the years, there have been many debates on which type of school to send a child to that guarantees their ability to be a college-bound scholar. However, what if this conversation was unnecessary? This interactive research exhibit will attempt to answer this question by exploring the importance of ACT scores, chronic absenteeism, and access to Early Post Secondary Opportunities (ESPOS) and using a predictive model to compare the differences between expected and actual post-secondary enrollment with these factors in mind.

Introduction

School choice has always been the most important thing on a parent's mind. There are so many determining factors like test scores and location. As students move on to high school, parents are focused on ensuring their child attends a school that prepares them for college. There are so many schools that prey on parents with the promise of producing a college-bound scholar. I wanted to explore if there was a correlation between school choice and college readiness to challenge these beliefs. My research question was does the type of school you attend affect your ability to be a college-bound scholar?

Background

For this research, I created a sample of 7 schools: three traditional public schools, three charter schools, and one non-traditional school. I chose my sample by selecting school clusters that had both traditional public and charter high schools. My sample included the following schools: Glencliff High School, Hunters Lane High School, Maplewood High School, KIPP Collegiate Nashville High School, RePublic High School, STEM Prep High School, and Early College High School.

Research Factors

The first portion of my research project was conducting a basic analysis of four factors: Ready Graduate, Chronic Absenteeism, ACT scores, and access to Early Post Secondary Opportunities (ESPOs).

In the state of Tennessee, the Ready Graduate metric is considered the standard of college readiness. It was created to be one of the measures the state uses to track school quality and student success per the requirements outlined in the Every Student Succeeds Act (ESSA). The purpose of the Ready Graduate metric is to celebrate schools and districts whose high school graduates demonstrate readiness for meaningful postsecondary education, a training program, and/or workplace entry. The data used for the Ready graduate metric is reported a year after a high school cohort graduates. This number is calculated by dividing the number of students who meet the Ready Graduate criteria by the total number of graduates. The criteria for Ready Grad include the following: 21+ on the ACT or 1060 on the SAT, complete 4 Early Post Secondary Opportunities (ESPOs), complete 2 ESPOs and obtain an industry credential, or complete 2 ESPOs and earn a score of military readiness on the ASVAB AFQT. I chose to use the Ready Graduate metric as a guiding metric for this project because I needed to have a basis of what college readiness means in the state of Tennessee. Having a general baseline of what to expect from students, assisted in the overall data analysis and research process.

The American College Test, or ACT for short, is a college entrance exam. Not only is it used in college admissions, but it is a big indicator in predicting a student's college success. For a student to be considered college ready, they must obtain a composite score of at least 21. A 21 on the ACT is also a requirement for students in the state of Tennessee to qualify for the Tennessee HOPE scholarship, an innovative effort made by the state to ensure students can afford to attend a two-year or four-year college/university. I chose to look at ACT scores because ACT scores and standardized testing are the number one cultural and academic components of college readiness.

Chronic Absenteeism: Attendance matters! Students deserve the opportunity to be successful and accomplish their goals. However, this is difficult if a child does not show up for school. According to Tennessee state law, children between the ages of 6 and 17 are required to attend school every day. In the Metropolitan Nashville Public School (MNPS) system, if a student is found unlawfully absent and/or habitually truant, they will be taken into state custody. Chronic absenteeism is when a child misses ten percent or more of the days he/she/they are enrolled in a

Tennessee school. Truancy is the legal term for unexcused absences. The criteria for a student to be considered truant in the MNPS school system is accumulating four or more unexcused absences in a school year. I chose to cover chronic absenteeism because school attendance is very critical to student success. As Nikki Healy, assistant principal at Early College High School puts it, “You just have to be here.” When a student attends school regularly, they can engage in fruitful opportunities both inside and outside of the classroom that can be transformative.

Early Postsecondary Opportunities (ESPOs): Early Postsecondary Opportunities (ESPOs) are exams and/or courses that allow high schoolers to gain postsecondary credit before graduation. The state of Tennessee offers the following offerings as ESPOs: Advanced Placement (AP), International Baccalaureate (IB), Cambridge International Examinations (CIE), the College Level Examination Program (CLEP), Dual Enrollment (DE), Local and Statewide Dual Credit (DC), and Student Industry Certifications. There are many benefits to students engaging in ESPOs during high school from becoming familiar with postsecondary rigor and expectations to decreasing the time and money to complete a certificate or degree. I chose to examine Early Postsecondary Opportunities because I understand how impactful they can be personally. By completing Dual Enrollment in my junior and senior years of high school, I was set up to be college bound and succeed during my undergraduate experience.

Predictive Model

The second part of my project was taking my research factors and using them to predict a College-Going Rate (CGR) for each respective school. For this section, I used the actual CGR from 2021 for Hunters Lane and KIPP Collegiate Nashville High School. I gathered these numbers from the Nashville Public Education Foundation.

To create my predictive model, I used multiple regression. My features were ACT score, chronic absenteeism, and ready grad. My target was CGR. I ran my model three times, each with every factor listed.

Next, I wanted to predict which of my factors were important in creating a college readiness strategy. To find this, I created a linear regression that focuses on feature importance. My

features for this model were a 21+ ACT score, chronic absenteeism, and access to ESPOs. My test size was 0.6 and my random state was 42.

Analysis

Preliminary Analysis

In my initial analysis of my factors, I recorded the following findings. First, for the Ready Graduate metric, all of the schools in my sample presented strong numbers in this field. I expected this since there were various ways to meet the criteria for this metric.

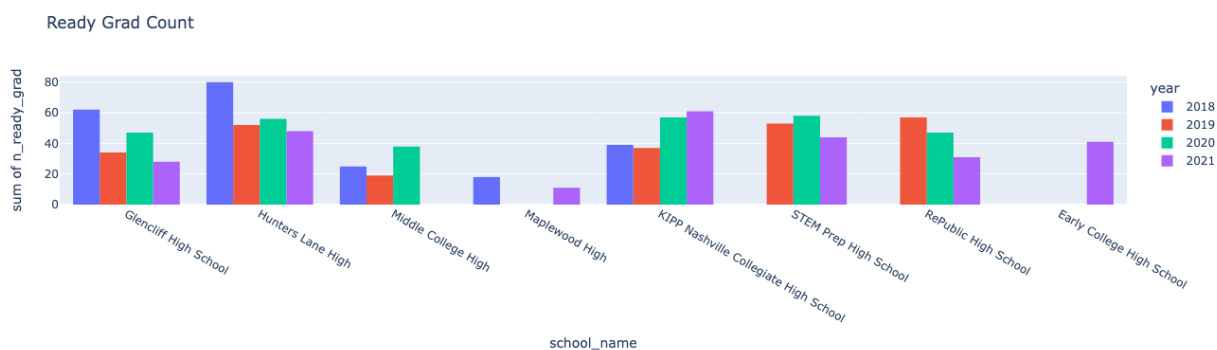


Figure 1: Ready Graduate graph

Second, charter schools reported higher scores than traditional public schools. This is due to charter schools focusing on an intensive ACT Prep strategy. Emily Lamb, Dean of College Access and Success reports her students start ACT Prep as early as their sophomore year. She and her team place a huge emphasis on the ACT because she understands the power the test can have for her students, especially her students who are first-generation Americans/college students. As a result, she owes them that opportunity to excel on the test.

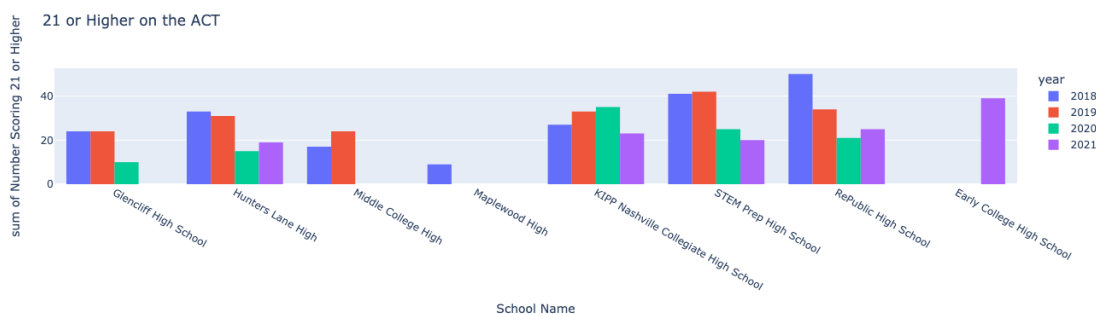


Figure 2: 21+ on the ACT

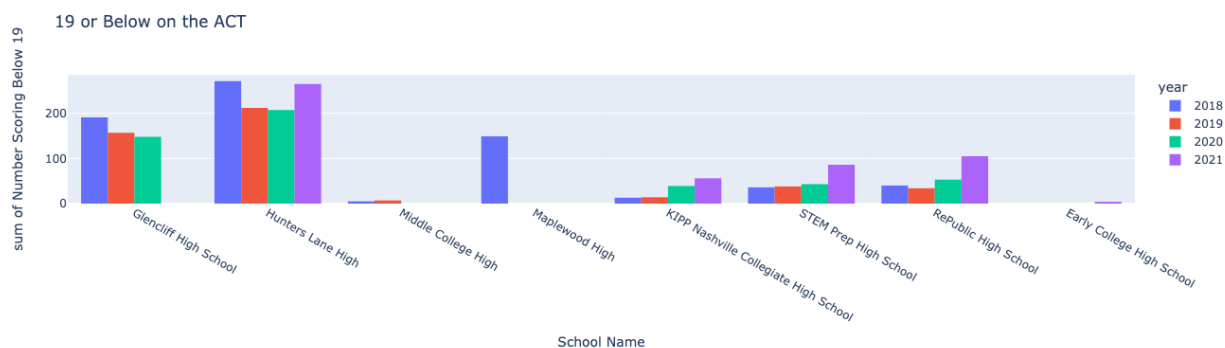


Figure 3: 19 or Below on the ACT

Next, schools with a smaller student population, such as Early College, RePublic, and STEM Prep, report lower chronic absenteeism rates than larger schools, like Hunters Lane and Maplewood. These schools report lower numbers because of their community-focused approach to attendance. At Early College, students and their parents/caregivers each receive a text and/or call checking in to see if they will be attending school. This personal approach to attendance allows students and their families to know they are cared for and encourage them to attend school.

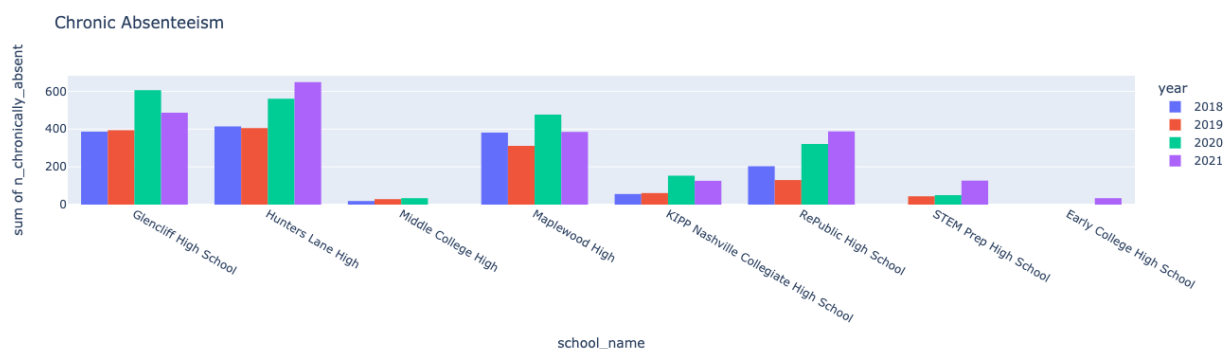


Figure 4: Chronic Absenteeism

Finally, traditional public schools tend to have more options for ESPOs. This is because of MNPS' Academies of Nashville. Academies of Nashville is an initiative by Metro Nashville that started 15 years ago. It is recognized by the White House as a national high school transformation model. There are currently 35 different academies in 12 zoned schools supported by over 365 community partners.

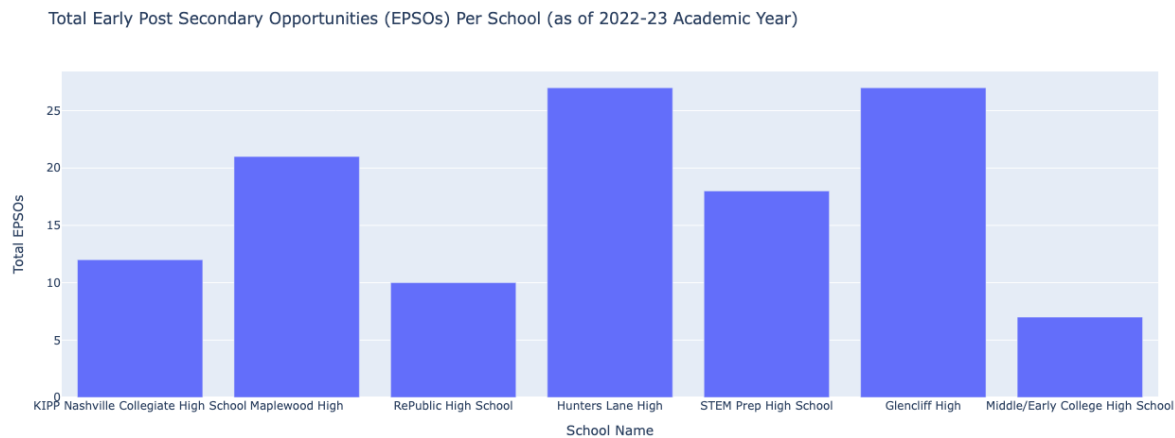


Figure 5: A graph showing total ESPO offerings as of the current academic year

Predictive Model and Feature Importance

The results of my predictive model were fascinating. The actual CGRs were 28% for Hunters Lane and 53% for KIPP Nashville Collegiate. According to each iteration of my model, the expected CGR was pretty close to the actual value. For the predictive CGR for ACT, it was 36.5% for Hunters Lane versus 68.9% for KIPP Nashville Collegiate. The predicted CGR for chronic absenteeism is -149.7% for Hunters Lane and 17.4% for KIPP Nashville Collegiate. Finally, for Ready Graduate, the predicted numbers were 40.8% for Hunters Lane and 61.6% for KIPP Nashville Collegiate.

In my feature importance graph, I focused on the graph's strength in correlation instead of the R-squared values. Based on analyzing the graphs, showed that a 21+ ACT score was the most important in creating a strong college readiness strategy.

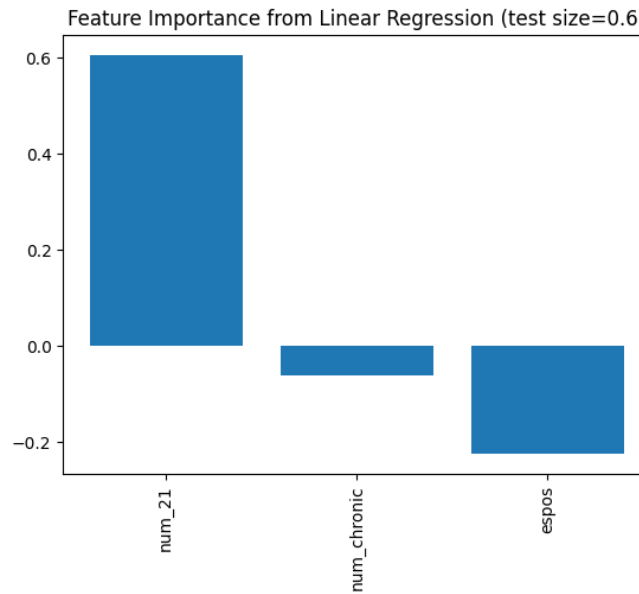


Figure 6: Feature Importance graph

Conclusion

In conclusion, the type of school a student attends can affect their ability to be a college-bound scholar. Additionally, ACT scores are the most important factor in college readiness.

Discussion

There are a few takeaways from this research experience. First, while the data shown in this project proves that the type of school a student attends affects their ability to be a college-bound scholar, it does not definitely determine this ability. "It is not a question of ability," says Emily Lamb of Independence Academy. She suggests that the type of school you attend affects the amount of work you have to do to be college ready. If you attend a school that incorporates time to work on college applications and FAFSA in the school day, you are going to have a better advantage than a student who does not have that same privilege.

Second, it is important to acknowledge while the data shows the ACT is an important factor in college readiness, there are conversations questioning its validity. From its roots in systematic racism to its inability to capture the entire student, it is important to have the willingness to have critical conversations about if the ACT is still relevant to the modern student.

Next, ESPOs were shown to be the least important factor in a college readiness strategy. However, there is still some value in giving students access to these opportunities. In addition to

the academic benefits, students can learn the soft skills associated with being in a postsecondary environment, such as self-efficacy.

Most importantly, other factors contribute to a student's ability to be college-bound. These include cultural influences, parent/caregiver involvement, and counselor support.