

2014

Observing Academic Performance Based on Increased Educational Spending: An Assessment of the FedEx Center at the University of Mississippi

Matthew Williams

University of Mississippi. Sally McDonnell Barksdale Honors College

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Observing Academic Performance Based on Increased Educational
Spending: An Assessment of the FedEx Center at the University of
Mississippi

By

Matt Williams

A thesis submitted to the faculty of The University of Mississippi in partial
fulfillment of the requirements of the Sally McDonnell Barksdale Honors
College.

Oxford
May 2014

Approved by

Advisor: Professor Carl Kitchens

Reader: Professor Joshua Hendrickson

Reader: Professor Rick Elam

Acknowledgements

I would like to thank Dr. Carl Kitchens, my advisor, for all the work associated with this paper and pushing me through the tough times. I would like to thank Dr. Joshua Hendrickson and Dr. Rick Elam for agreeing to be additional readers for this paper. I would also like to thank the Sally McDonnell Barksdale Honors College for funds to support the project and the Institutional Review Board for approving and helping to collect data. I would like to thank Dr. Ross Haenfler and Dr. Elizabeth Ervin for helping get this project started and progressing the thesis process. Finally, I would like to thank Derek Cowherd and Drew Clinton for conducting the interview and providing important information for this thesis.

ABSTRACT

MATT WILLIAMS: Observing Academic Performance Based on Increased Educational Spending: An Assessment of the FedEx Center at the University of Mississippi
(Under the direction of Carl Kitchens)

In 2007, the FedEx Student-Athlete Academic Support Center, a renovation from the Starnes Center, was completed at the University of Mississippi to provide student-athletes a facility to improve academic performance in the classroom. FedEx donated \$2.5 million to the project, covering half of the total expenditure. This private funding presents an opportunity to study how increased spending on education affected performance amongst student athletes in the classroom. Using semester-by-semester GPA of student-athletes and graduation rates from 2003 to 2009, it is possible to identify which students were exposed to the new facilities and thus, able to assess the effect of this exposure. The results show no change in graduation rates; however grade point averages increased by .17 for those exposed to the new facilities.

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1 INTRODUCTION

In 2005, the University of Mississippi and FedEx Corporation joined together to design the FedEx Student-Athlete Academic Support Center, a building on the Oxford, MS campus that focuses on the educational experience of student-athletes. FedEx donated two and a half million dollars to help fund the project. The concept behind the center was to create “an elite academic support center for student-athletes.” In May of 2007, the FedEx Center was completed at a cost of roughly five million dollars (“FedEx Student-Athlete Academic Support Center”). The facility provides computer areas, study halls, and more tutoring opportunities to student athletes as well as classrooms for the entire student body. Currently, the FedEx Center operates with a \$1.4 million budget, but for this paper, the primary focus will be on the initial \$2.5 million portion from the university. While the donation is generous, it is still a relatively small contribution when comparing it to the annual budget considering the operating amount is over half of the overall gift from FedEx. The goal for the facility and the staff involved is to graduate every student-athlete and lead them toward a positive future (D. Cowherd & D. Clinton, personal communication, December 19, 2013). This generous gift provides researchers the opportunity to study the impact of education spending on academic success for a subset of individuals.

While the FedEx center has undoubtedly touched numerous student-athletes at the University of Mississippi, this paper will focus on the marginal impact of additional spending and look into the effect that education spending has on education outcomes. Essentially, did the additional \$2.5 million from FedEx lead to additional improvements in student athlete outcomes above and beyond the baseline efforts of the academic

support staff? Does spending more money lead to an increase in graduation rates or student grade point averages during a student-athlete's time at the university?

The effects of education spending are particularly relevant for policy makers at local, state, and federal levels. Educators have sought a variety of curriculums and standards to shape the future workforce. In the last decade, these initiatives include No Child Left Behind, and more recently, the adoption of Common Core Standards. Each of these initiatives has involved widespread retraining of instructional faculty and increased education expenditures by school districts, yet their ultimate effectiveness is often difficult to evaluate over a short time horizon.

Researchers have found mixed effects from educational spending. For instance, in developing nations, conditional cash transfers, such as Mexico's Oportunidades, previously known as Progresá, has led to increases in educational attainment (Angelucci & Attanasio 2009). Other spending initiatives, such as a recent effort by the Los Angeles school district to purchase every student an iPad, has backfired, as students hacked the devices to access applications such as Twitter and Facebook, wasting millions of taxpayer dollars (Blume 2013), and likely did not improve the academic outcomes of the students receiving the iPads.

Given the spectrum of spending programs and their mixed effects on educational outcomes, existing literature is added by examining the small, yet easily measured experience at Ole Miss via the funding of the FedEx Center. To estimate the effect of additional educational spending, data has been obtained from the university registrar that is de-identified, individual level, semester-by-semester GPA and graduation data for current and former Ole Miss student athletes from 2003 to 2013. The timing of the

opening of the FedEx Center is used to identify, which students were exposed to the additional supplemental educational opportunities. Next, a comparison is done to observe treated student athletes to student athletes enrolled from 2003-2007 that looked similar when they enrolled at the university in terms of their high school GPA and ACT score. Regression results, described in more detail below, indicate that the FedEx Center increased student athletes' GPAs, by approximately 0.17 GPA points, or roughly 6% percent of the baseline GPA. Students, who are lower in the ability distribution in terms of their entering ACT score and GPA, are not differentially affected by the additional opportunities relative to a student in the top quartile of the ability distribution. Finally, there is no evidence that graduation rates increase as a result of the additional funding.

The research reported here adds to existing literature by examining the effects of educational spending on educational outcomes. This paper will also discuss the institutional details of the FedEx Student Athlete Success Center, provide an overview of the data, outline the empirical strategy, and describe the results, their implications, and then conclude.

2 LITERATURE REVIEW IN EDUCATIONAL SPENDING AND STUDENT PERFORMANCE

From 2009 to 2011, State Budget Solutions evaluated whether the United States relatively high educational spending budget results in the proper performance level compared to other nations around the world. In 2010, the United States spent \$809 billion dollars on education, which was higher than any other country in the sample. The test scores, however, did not show that the money was helping. The average score on

math tests for an American student was 474 out of 600 possible points (De Peña 2012). Canada scored a 527 with spending totals at 65.4 billion dollars and Finland finished with a 548 with an educational budget at only 10 billion. Finland and Canada, however, have smaller budgets due to their student population size. To account for this difference, spending per student is more relevant to put every country on the same platform.

When observing annual spending per capita, the United States totals \$7,743 as compared to \$5,653 and \$5,749 for Finland and Canada, respectively. Out of the ten countries in the USC study, the United States had the highest spending per school-aged child, which are ages 6 to 23 according to the United Nations, but finished toward the bottom in math and science test scores. The United Kingdom followed the same pattern as the United States, while Brazil and Mexico, spent far less per student than the United States, and produced the lowest test scores, literacy rate, and school life expectancy than the other nations (University of Southern California Rossier Staff 2011). Spending per capita is also a valuable tool to measure the educational spending at the state level, as well. The same trend was seen in a state-by-state analysis.

In 2010 and 2011, the top five states for educational spending, based on percentage of total funds, were Texas, Michigan, Vermont, Arkansas, and Virginia. Four out of the five states, exception being Vermont, “did not have the highest average graduation rates or the highest average ACT scores.” Texas, New York, and California were among the highest percentages of educational spending in the country, but were below the national high school graduation average in all three years of the study (De Peña 2012).

To contrast different state school districts, it is best to look at areas within similar settings to give a fair comparison. Texas, New York, and California all possess significant population totals and fall into the same category. New York spent \$19,076 per student, while Texas and California spent far less at \$8,671 and \$9,139, respectively (U.S. Department of Commerce 2011). Despite New York spending nearly double per student than the other two states, the results did not differ in any significant way. All three states fell below the national graduation average between 2009 and 2011, while Texas was also behind in average ACT score.

State Budget Solutions was not the only study to find that spending more money does not equate to higher performance measures (De Peña 2012). A study from New York University looked into the 1965 Elementary and Secondary Education Act Title I provision, and its impact on New York City public schools from 1996-1997 to 2003-2004. Title I was a provision within the act that provided federal funding to poor children to help boost results. The researchers found that the extra funds for Title I schools did not have an effect on closing the gap between poor students and more advanced individuals. This study also states that the Title I schools may have reduced average test scores in elementary and middle schools. State Budget Solutions and New York University observed what happened when a relatively small amount of educational funds were added to the state's or school's budget.

The longer a school was using the additional funds, the more this trend existed. The researchers further explained that pumping money into a school did not necessarily mean that academic performance would increase and in some cases, actually resulted in lower results (Weinstein et al. 2009). It is important, however, to consider where a

school district started when evaluating the effects of spending. If a school was performing poorly and the additional funding only slightly improved the results, it is difficult to measure the effects of the money due to prior performance.

Shane Thompson (2012) looked into the effects of a much larger funding increase from an outside source in Wyoming. In 2005, Wyoming saw a significant rise in tax revenues and extra funds after natural gas prices raised sharply, which the state has no control over. The Wyoming legislature chose to use a large portion of the new wealth toward public education after struggling with funding during the 1990s. Scholarship opportunities for in-state students increased and teacher salaries saw an eighteen percent jump on average. The rise in money, however, did not produce improvement in academic performance. While the evaluation is shortly after the program's increase in funding, graduation rates remained the same and only eighth grade math scores showed positive growth. Reading results for both grade levels tested actually fell after the additional spending (Thompson 2012). As more time passes and a larger amount of data is obtained, then the results may differ depending on the effects the funding has on teacher quality and student performance.

Michael Maloney and Robert McCormick, the research that is most closely related with this paper and authors of "An Examination of the Role that Intercollegiate Athletic Participation Plays in Academic Achievement," study how student-athletes perform in the classroom relative to non student-athletes at Clemson University. After this comparison, they look into seasonal play and the effects it has on academic performance. Maloney and McCormick's study occurred prior to inception of the Student-Athlete Enrichment Program, which was created in 1991 in Vickery Hall. This

facility took three million dollars to build and was the first academic support center constructed to solely help student-athletes. The athletes in the Clemson study did not receive the benefit of the facility (Maloney and McCormick 1993).

In their study, they construct an individual level, semester-by-semester dataset that consists of the academic years spanning from 1985 to 1988. They observe a total of 594 different athletes and over 13,000 grades from different courses with football players representing the largest portion of the sample at twenty-eight. The study finds that student-athletes have a grade point average of 2.379 during the time period, which is lower by a statistically significant margin from the student body's overall GPA of 2.681. Men's basketball and football are the lowest with grade point averages of 1.930 and 2.115, respectively. Graduation rates for the student-athletes are also about 10 percent lower than the student body average.

During the study, Maloney and McCormick find two possible causes for the lower GPA and graduation performance for student-athletes. First, the student-athletes are not coming to college as prepared as regular students, which results in three-tenths lower GPA. Athletes scored 150 points worse on the SAT and a class rank twenty percentage points lower than the rest of the study body, causing the decrease in classroom performance and proving the significant impact behind a strong academic background.

The other reason comes from an idea called the "seasonal phenomenon." Maloney and McCormick find that student-athletes participating in revenue sports, such as football and basketball, perform worse in the classroom while the season is occurring. They believe athletes are being exploited in these two sports due to the intense schedules and the shortening of the seasons would increase academic performance. Nonrevenue

sports did not produce the same effect, showing that these student-athletes perform the same as nonathletes in and out of season when accounting for academic background (Maloney and McCormick 1993).

Thompson's study, along with the previous literature mentioning K-12 education, showed that academic performance and additional funding are not correlated for public education in K-12. Maloney and McCormick showed that high school education has a significant effect on a student's performance in college. The study reported here continues the line of research, except on the college level at the University of Mississippi, observing student-athletes. Another key difference is that the funds donated by FedEx went into building a new facility to help students, instead of being pumped into a preexisting university or school. This paper will look into the effect an academic support center and additional spending has on student-athletes in a college setting, essentially bringing together the Clemson paper with the K-12 literature.

3 BACKGROUND ON THE FEDEX CENTER

As previously mentioned, the FedEx Student-Athlete Academic Support Center was completed in May 2007 at a cost of \$5 million. With this price tag, it is essential to look into some of the improvements and background related to the facility. To find out more, Derek Cowherd and Drew Clinton were kind enough to participate in an interview to provide useful information about the FedEx Center.

Cowherd, Senior Associate Athletic Director for Academics, and Clinton, one of the Associate Directors in the Academic Support department, are two of the key individuals that help lead the FedEx Center and assist student-athletes with academics.

Cowherd joined the staff in May 2012. Prior to his arrival, he was Director of Academic Affairs at LSU, where he supervised over seven full-time advisors, four graduate assistants, and interns (“Derek Cowherd”). Clinton has been a part of the Ole Miss staff for eight and a half years, meaning he has been an employee before and after the creation of the FedEx Center. Both men have great knowledge about the facility, giving very insightful information about the FedEx Center and possible explanations behind the results found in this study. When asked about how much more the students-athletes are being helped after the completion of the FedEx Center, they said that there is more of an emphasis to graduate individuals, especially through the degree completion program (D. Cowherd & D. Clinton, personal communication, December 19, 2013). This program, allowed by the NCAA, is designed to help athletes that are within 30 hours of completing their degree by permitting the student to receive tuition or anything less than the tuition if they have used up their eligibility for financial aid (“NCAA Division I Degree Completion Award Program”). For example, if someone decides to leave the university early to enter the NFL, then that individual has the ability to come back at some point in the future and earn his degree while receiving an award that covers the cost of tuition and fees. It eliminates the financial burden from the former student-athlete to make earning the degree more manageable.

The FedEx Center has grown in size based on the number of employees over the past several years. When Clinton started working for Ole Miss, the academic support group at that time only had four employees. Today, the FedEx Center has expanded to eighteen members on staff. This growth allows for more resources and greater assistance for the student-athletes. The increased staff, along with the academic tutors, made it

possible for over 20,000 tutoring appointments to be completed in the past year (D. Cowherd & D. Clinton, personal communication, December 19, 2013). While the infrastructure is an essential part of the learning atmosphere for the student-athletes, the academic support staff operates the FedEx Center and makes all the results from the study possible.

There are several obstacles for the facility has to overcome that may hurt academic performance results for the student-athletes. First, the budget for the current year is \$1.4 million and the tutoring aspect is surprisingly low compared to the total. While Cowherd says the total amount is doable, most of the budget consists of only salary, which limits opportunities for more resources available in other areas of the facility. Another problem is related to the academic tutors and job turnover. Typically, the tutors are graduate students in masters programs or individuals close to graduating. Most of the people hired are part-time and only stay with the FedEx Center for a year or two due to the length of their current program. Therefore, the job turnover is nearly 100% each year, which means new tutors have to constantly be trained. This not only takes away from time for student-athletes, but also uses up more funding and resources that may be used in a different area. Cowherd and Clinton pointed out that at times, some tutors have to leave the FedEx Center due to pressures, especially coming from the NCAA. The NCAA is very unforgiving and can be difficult to deal with in certain situations. There are strict rules and regulations that the NCAA enforces on tutors and some individuals would rather work somewhere else on campus without the scrutiny. Some academic tutors are also not able to handle all the rules and responsibilities, leading them to leave the facility and putting the FedEx Center short on tutors. Despite the large

turnover, Cowherd and the academic staff emphasize the importance of academic integrity to everyone within the facility and “feel like we are doing the right things here 100% of the time now” (D. Cowherd & D. Clinton, personal communication, December 19, 2013).

While the FedEx Center is a helpful building for all student-athletes, there are times when the facility cannot control for certain issues that arise. The biggest obstacle occurs from external pressure created from outside parties or the media. For example, Bo Wallace had a rough game against Mississippi State University and some individuals believed he cost the game for Ole Miss. The following day, Wallace was seen all over social media and took a large amount of heat after the performance (Carson 2013). In order to combat these great pressures, the FedEx Center and staff try to manage the athletes in that moment. According to Cowherd and Clinton, the external pressure is an absolute struggle, but it is what the athletes signed up for. Their job is to focus on academics and bring the athlete’s mind to look at only the present situation. Another example occurs when a student-athlete performs poorly on a test. If that stays on the mind all day, then that individual may struggle in practice, film, and study hall, leading to a rough day that can affect the entire team and most importantly, the athlete. That is why the staff at the FedEx Center helps student-athletes block out all the negatives and bring their focus to the next task. Cowherd and Clinton say nothing can bleed over into the next moment.

External pressures are not the only problem for the FedEx Center. Travel schedule is one of the most difficult aspects of being an athlete. The goal is to minimize the missing of classes, but if the team has several road games in a week, then the main

objective becomes harder to fulfill. The staff supplements the athletes with tutoring to combat the lack of time in the classroom. If possible, an academic counselor may go on the road with a team to hold study halls and block out time for academics. Ole Miss does this when necessary, but understands that constantly being on the road would take away from helping other student-athletes.

Cowherd gave an example that brought multiple difficulties together and created a struggle for not only the student-athlete, but also the FedEx Center. The women's soccer team made the NCAA tournament and traveled to Florida State for the Round of 32 on a Thursday night. One player had a paper due Friday that would determine her grade for the entire class. The professor would not allow the individual to turn in the assignment early, even though it was already done, and required every student to submit the paper in person. After the Rebels fell to the Seminoles, this student-athlete had to get on a plane and travel back to Oxford at 3 a.m. to turn in the assignment. These issues occur every once in a while, but it shows the importance of the FedEx Center. Without the facility's staff, it is highly doubtful the individual would have gotten back to Oxford in time to turn in the paper and pass the class.

The future for the FedEx Center looks to enclose some open area and use more of the functional space. With nearly 400 student-athletes across all sports and averaging nearly 12 appointments per hour, it would be helpful to utilize certain aspects such as tutorial space to help increase the number of student-athletes being assisted. With the expansion of the football stadium, some space will be taken from the FedEx Center and moved to the Gillom Sports Center for a temporary period. The greatest need is an increase in tutoring rooms to provide service to more students but with construction plans

changing daily, it is difficult to determine when the actual plans will go into action. Not a lot of square footage will be added in the immediate future.

Looking at the academic side, Cowherd and Clinton stressed the goal is to graduate as many student-athletes as possible. Cowherd also pointed the success of the women's soccer team this past year on and off the field, making the Round of 32 in the NCAA tournament and maintaining a 3.68 team GPA. It is the highest team GPA in all the years that this has been studied and one of the best seasons for the team. At the end of the day, the FedEx Center is extremely appreciative for what they have and takes great pride in student-athletes graduating. Cowherd says the goal is to, "improve our graduation rates, academic progress rate and team GPA's by adhering to our agreed upon policies, goals, objectives, and core principles." He believes this will be done with the support from the coaches, buy in from the student-athletes, and "more attention to detail from our staff." Cowherd and Clinton believe the FedEx Center along with student-athletes' performance will continue in a positive direction and the results will continue to increase in the future (D. Cowherd & D. Clinton, personal communication, December 19, 2013).

4 DATA

To evaluate the effect of the FedEx Center on student athlete academic performance, the data collected is on an individual level including semester-by-semester GPA data from 2003 to 2013 and graduation data from 2003 to 2009.¹ The data reports when a student enrolled at Ole Miss, the current semester, the student's current semester

¹ Student-athletes that entered the University of Mississippi after 2009 were dropped from the graduation data to allow each athlete an average of four years to complete a degree.

GPA, an indicator equal to 1 if the student has graduated (zero otherwise), as well as incoming characteristics of the student, such as either their ACT or SAT and their high school GPA.

The data set contains 1,218 student-athletes within the graduation data for student-athletes who started at Ole Miss from 2003 to 2009 and 1,585 for semester-by-semester GPA data. One excel sheet is used to construct the findings, which contains semester-by-semester GPA starting in the Fall 2003 and ending in the Spring of 2013. It also possesses graduation status, high school GPA, ACT, year of enrollment, and other necessary information to keep track of each individual. If a student-athlete only took the SAT, an ACT conversion is used to convert the scores (“Compare ACT and SAT Scores”). The ACT average for the student-athletes is 21.5, while the high school GPA mean is a 3.19.

The average semester GPA is a 2.59 between the years 2003 and 2013. 851 students started school during or after 2007, which is the year that the FedEx Center was completed. These students are the main focus to see the effect the FedEx Center has on graduation rate and semester-by-semester GPA changes over an athlete’s college life.

Table 1, as seen in the tables section, examines the trends between the SEC schools, excluding Missouri and Texas A&M, for cohorts from 1999 to 2006. Student body, referred to as SB, is also included in the table to compare with the student-athletes. This data shows that graduation rates using the Graduation Success Rate (GSR) and Federal Graduation Rate (FGR) were along the same trends. A major difference between the two rates is that GSR accounts for transfers leaving the institution, while FGR does not. The Federal Graduation Rate only measures the percentage of incoming, full-time

freshmen entering a four-year degree program that graduate within six years (“What is the Graduation Success Rate?”). In general, most schools possessed a higher Graduation Success Rate for student-athletes than Federal Graduation Rate for regular students.

At the University of Mississippi, graduation rates prior to the FedEx center, graduation rates were flat, with a slight increase in the SB after 2003. Failure to account for this trend may lead to a misinterpretation of the FedEx center's impact, as the timing of the center roughly corresponds with this increase.

When observing 2006, the latest cohort, Ole Miss student-athletes ranked ninth among SEC schools in GSR (tied with Tennessee and Auburn at 75%). The student body, designated SB in the table, shows that the University of Mississippi finished at the bottom at 58%, tying with Mississippi State. Ole Miss also failed to show significant growth since the 1999 cohort, only growing 1% in GSR. Georgia, Alabama, and LSU went up 10 to 20 percentage points over the same time frame. Ole Miss student-athletes are outperforming the student body in relation to graduation rates, but fall behind as compared to the rest of the SEC.

Due to privacy laws, the data set does not contain any identifiers other than a record number that allows individuals to be tracked over time. The data also reports the year that the student athlete began at Ole Miss and also indicates whether or not the athlete was a transfer. These limitations prevent accounting for the athletes by sport, race, or any other potential variable, however, because it is possible to follow the same individual over time, these characteristics are fixed within the sample (i.e., students are not changing sport). The original data sheet has summer hours and intersession, but does not mention how many hours an athlete took during the term, which makes it difficult to

assess because student athletes are not taking a full academic load. Thus all data not reported in the fall and spring semesters is dropped. This may lead to a bias in the results if the FedEx Center aided student-athletes differently in the summer relative to the fall or spring semesters. Finally, a few athletes are dropped from the sample due to inconsistencies in the data. For instance, some students do not have high school GPAs or ACT scores, making it impossible to identify whether the FedEx Center had an impact on their academic performance at the University of Mississippi.

5 EMPIRICAL STRATEGY

To estimate the effect of the FedEx center, a set of linear regressions are used that seek to correlate the impact of the FedEx center with academic outcomes. The results are identified through variation over time, comparing similar students, in terms of the ACT score and high school GPA, who received exposure to the FedEx center, to those that did not receive exposure. Keeping in mind that the FedEx center spending went into effect after 2007, the tests will effectively compare the outcomes of similar entering student profiles before and after 2007. Formally, the following linear regressions are used to estimate the effect of the new spending in 2007, which was used to create the FedEx Center and measure academic success:

$$Y_{it} = \beta_1 treatment + \beta_2 ACT + \beta_3 OverallHighSchoolGPA + \beta_4 timetrend$$

In the first sample, Y will take on values of semester-by-semester GPA for an individual, i, in semester t. In the second sample, Y will be an indicator variable equal to 1 if the given student athlete has graduated and will be 0 otherwise. Treatment is an indicator variable equal to 1 if the student athlete was exposed to the new facilities created by the

FedEx money, (ie, enrolled following 2007) and is zero otherwise. Thus, in the GPA sample, the treatment coefficient will measure the marginal increase in GPA that results from FedEx exposure in the given semester for individual i . In the Graduation sample, the treatment coefficient measures the increased probability that a given individual graduates.

To control for the academic ability of student athletes, an important determinate of academic success, there are two observable characteristics to look at, the student's ACT score equivalent and the student's high school GPA. Omission of these measures would lead to comparisons between students with differing ability, which may lead to incorrect interpretations of the treatment effect. Additionally, to capture changes in the composition of the student body, due to university wide initiatives to improve the quality of incoming students ("FAQs"²), which may lead to positive spillovers through interactions with student athletes, a linear time trend variable is included.

In order for this identification strategy to work, students who were ineligible for treatment must be on similar trends to those who received treatment. This assumption is tested below.

6 ATHLETE COMPARABILITY

For this study to have meaning, it is essential to make sure that every athlete is on the same academic trend when entering the University of Mississippi. To determine if a student-athletes starting in 2003 look similar to student athletes beginning in 2007,

² The University of Mississippi developed the UM 2020 Initiative to deliver a vision that will continue throughout the decade. The university says the UM 2020 plan "will help us rise to the opportunities we already foresee, such as serving a growing and increasingly diverse student body, supporting a world-class faculty and research enterprise, and transforming our state and the nation through service, as well as to meet those challenges we have not yet anticipated" (UM 2020).

incoming characteristics of individuals controlling for a time trend are compared. For example, average incoming, ACT equivalent is examined to demonstrate whether or not new freshman before and after the FedEx intervention look similar by specifying the following regression

$$ACT_{it} = \beta_1 treatment + \beta_2 timetrend$$

ACT, Treatment, and timetrend are defined as before. The results of this regression, and a similar one reporting incoming freshmen's high school GPA are presented in Table 2. Based on the t-statistic for treatment, it shows that the average ability of person coming into Ole Miss is the same before and after the completion of the FedEx Center. For example, a student entering in 2003 with a high school GPA of 3.0 and a 21 ACT is the same as an individual coming in 2009 with identical GPA and ACT. Comparability helps determine the true effect of the FedEx Center on a student and prevents skewed results. If students in 2009 came in smarter than people in 2003, then it would be difficult to verify the helpfulness of the academic facility because the students exposed to the treatment have a different composition than those enrolled prior to the completion of the FedEx Center. Now that all students are all on the same level academically when entering Ole Miss, the FedEx Center's impact can be measured based on graduation and semester-by-semester GPA.

7 MAIN RESULTS

The main results of the paper are presented in this section using the formulation outlined in the empirical section. First, there is a discussion about the effects of the

FedEx Center on graduation rates. After this, it shifts to effects using semester-by-semester GPA as the outcome of interest.

The main results, presented in Table 3 show that the FedEx Center has no statistically significant effect on graduation rates. ACT and High School GPA coefficients are positive with ACT equaling .0110, while High School GPA is .198. The t-statistics for ACT and High School GPA are 2.83 and 7.40, respectively, meaning individual's beginning ability determines the likelihood of someone graduating from the University of Mississippi. For treatment, the coefficient is .0542 and the t-statistic equals 1.02, which means the FedEx Center does not improve or worsen graduation rates. Thus, the most important determinates of graduation are the individuals starting ability. The results indicate that an individual starting in 2003 has the same probability of finishing school as someone beginning in 2009.

Graduation is a discrete measure of success. While athletes may not show improvement in graduation rates, more finely tuned measures, such as semester GPA, may reflect the impact of the FedEx center's programs. In the third column of Table 3, the estimates are reported using the Semester-by-Semester GPA as the outcome of interest.

The results show that the FedEx Center has a positive and statistically significant effect on an athlete's semester-by-semester GPA. The coefficient is between a .16 and .17, which means that an individual's GPA increased by this amount if they were exposed to the FedEx programs. To put this coefficient into perspective, the average student athlete's GPA prior to the FedEx Center was 2.59, thus having access to the FedEx programs increased student athlete performance in the classroom by six percentage

points. For example, if an individual's GPA in 2003 were a 3.0 without the FedEx Center, then in 2009, that same person's GPA would increase to a 3.17 with the help of the treatment.

In regards to the coefficient for semester-by-semester GPA, it is important to note that this number is without knowledge of how many student-athletes use the facility. If only about 25% of students used the FedEx Center, then the overall effect is actually larger. The coefficient mentioned above is used because some eligible people do not participate.

8 ADDITIONAL RESULTS

The main results suggested that graduation rates for student athletes were flat relative to trend following the FedEx Center, and that semester GPA increased slightly. The empirical specifications above focus on the average effect, and likely miss some of the more interesting distributional effects. For instance, the mean effect is likely very small if students in the top end of the ability distribution did not improve, and low ability students improved, because only half of the athletes experienced improvements. To address these issues, the model is re-specified to examine the effect of the FedEx Center programs at different points in the ability distribution.

To do this, the model is augmented as follows. Ability distribution is divided into quartiles by ACT score equivalents and then interact this variable with the treatment variable.

$$Y_{it} = \beta_1 treatment * ACT\ Quartile + \beta_2 ACT + \beta_3 OverallHighSchoolGPA + \beta_4 timetrend$$

Table 4 presents the results, both for graduation and GPA. The results suggest that individuals in the 25% to 50% quartile, who based on ACT score, need the most help, do not see any statistically significant difference with athletes in the 75% to 100% quartile. Therefore, an athlete with a 20 ACT coming into Ole Miss has the same increase in GPA as a person with a 28 ACT.

9 DISCUSSION

The results have implied that the additional funding by FedEx has led to improvements in student athlete success, limited to slightly higher GPA's. In assessing the performance of the center, it is useful to determine how much money has been spent on each student to achieve this improvement.

An important aspect in the increase is the cost attached to improving an athlete's GPA. In 2005, FedEx donated 2.5 million dollars to help improve student-athletes' success at the University of Mississippi. As mentioned before, 851 individuals had access to the treatment as of Spring 2013. When breaking down the dollar amount per student based on the increase in GPA, it equates to \$2,938 dollars per student. If the University of Mississippi wants the overall semester-by-semester GPA to improve from a 2.59 to a 3.59, then it would cost about \$17,700 per student or roughly \$15,000,000. This is assuming a linear effect for GPA, meaning that it would cost the same amount to increase the GPA to a 2.80 as it would raising the GPA to a 3.30. A linear model is used for simplicity, but in most instances, it is harder and costs more to raise an individual's GPA percentage points as the average starts to become higher and higher.

10 SPECULATION

The results show that the FedEx center did not improve graduation rates and had a positive effect on GPA, increasing GPAs by 0.17 points. However, the implied cost of the improvement seems large. In this section, some of the factors influencing the success of the center are discussed. For example, why is the improvement not larger considering the amount of money pumped into the existing facility? It is difficult to pinpoint the exact reason, but there are a few possible explanations to help explain this possible criticism.

Ever since the completion of the FedEx Center in May 2007, Ole Miss has had three football coaches, Ed Orgeron, Houston Nutt, and Hugh Freeze, and two athletic directors, Pete Boone and Ross Bjork. If only observing football, arguably the number one sport at Ole Miss, that is a significant amount of change to occur over the past six years. Different coaches bring unique styles of play, tactics, and varying degrees of emphasis on education. One coach might keep track of the players on a daily basis to make sure they are getting the proper tutoring and are attending classes, while another only cares about what happens at practices and on Saturdays. Another possible issue is that the constant changing of coaches adds confusion and stress to the student-athletes. Typically, if a coach is fired or resigns, it is usually due to poor performance on the field with a lack of ability to improve the program.

For example, in 2010 and 2011, Coach Nutt had records of 4-8 and 2-10, respectively. He won one SEC game over the two-year span, while also finishing last in the western division part of the conference in both seasons (“Football Statistics”). He was fired in the middle of the season in 2011, but finished out the remaining games. The performance of the team might have had a negative impact on the players’ academics due

to the issues revolving around the team. The stress and negativity surrounding the team could have translated into a lack of care and focus in the classroom, thus, resulting in a decrease in performance. This may have been especially true after the firing of Nutt. The coaching staff is supposed to hold every player accountable. However, if Nutt was already fired and knew the results throughout the remaining part of the season had little influence on his job, then what is the incentive to continue striving for the best out of the athletes in and out of the classroom? Once an athletics department, coaching staff, and fans have given up on a season, it is only a matter of time before the same happens to the players. If this occurs, it is entirely possible that once the student-athletes stop caring about their outcome in the season, this same attitude may lead to a similar mindset in the classroom.

Another significant event occurred around the same time as Coach Nutt's firing. Pete Boone, the former Ole Miss athletic director, announced on November 7, 2011, that he would resign from his position before December 2012. In June 2012, Boone stepped down, leading to the hiring of current athletic director, Ross Bjork. Before his current tenure at Ole Miss, Bjork was the director of athletics at Western Kentucky University ("Ole Miss Names Ross Bjork New Athletics Director"). A change in athletic director is a very important matter because of the magnitude of the position. Essentially, the job requires the individual to be in charge and oversee all activities within the school's athletic department, which includes student-athlete's academic performance. This type of hiring has the ability to greatly impact the entire culture and landscape of the athletics department and the sports team. His goals and objectives of the entire program may completely change outcomes and results. For example, if Ross Bjork emphasizes

education for student-athletes more than Pete Boone, then it might lead to higher performance results and ultimately, a new direction for athletics. It is still early to see any significant impact from Bjork as it relates to academic results, but should be interesting to see how the Ole Miss' athletic programs perform in the classroom under the new leader. A change in personnel in any environment has the ability to alter the culture and results, but it is not the only factor when observing a lower performance level.

Money is an essential part of any project to reach most desired goals. When Ole Miss set out to build the academic support center, the university knew funds were needed to make this possible. At the end of the project, \$2.5 million was spent to finish the academic support center, but what was the intent of the money? Basically, did Ole Miss build the FedEx Center to provide facilities and enhance infrastructure or to improve academic outcomes for the student-athletes? For example, when spending the money, the athletics department's sole purpose was to increase academic performance and only used the money to strategically build the facility to maximize results. If this is the case, then the funds were intended to produce a positive effect on education. It also means that the University of Mississippi put the student-athletes first when spending the money.

On the other hand, if the academic support facility was built to solely improve infrastructure, then education was not the intended result. The FedEx Center might have been designed to preserve the beauty of Ole Miss or to encourage future athletic recruits to attend the school. In essence, the money spent had an alternative motive, but also produced a result in academic performance. This theory falls in line with the notion that the .17 GPA increase and insignificant graduation improvement are not large enough results. If the University of Mississippi were able to produce these performance levels

without any intention to do so, then the actual results might have been much more significant if the entire \$2.5 million were spent only on education. This infrastructure versus education question also brings up another key dynamic to the learning environment of the FedEx Center.

There is an old adage that says, “If you build it, they will come.” For Ole Miss, that might not necessarily be the case. The center provides computers, study halls, and additional classrooms for student-athletes, as well as other students, to help individuals with their education and achieve the highest academic success through the new infrastructure. Are athletes, however, more willing to use these upgraded facilities as compared to the old? Does the academic support center encourage student-athletes to study more? As mentioned previously, if the building was intended for purely education, then the answer should be yes. It shows these individuals that the university and athletics care about their academic success and want them to achieve their goals through the use of the facilities. The FedEx Center provides the necessary tools and with the added support and emphasis on education, student-athletes should have no issue feeling encouraged to study.

If the building’s sole intention was to provide a beautiful infrastructure, and not promote education, then nothing really changed from before and after 2007. The players would see the upgraded facility in the same light as the old, and not feel anymore incentive to study as before. This would mean that the student-athletes’ overall success is not impacted through a building, but through their own ambition and determination. Therefore, the GPA increase since 2007 would become an unintended benefit that the

university is able to promote as result from the FedEx Center and not through student achievement.

11 CONCLUSION

Established in 2007 after a \$2.5 million dollar donation from FedEx, the FedEx Student-Athlete Academic Support Center has provided helpful tools to student-athletes at the University of Mississippi. This paper looked into the effects the facility has on semester-by-semester GPA and graduation percentages. These calculations were derived from data the University of Mississippi provided. Student-athletes that attended the university from 2003 to 2009 were a part of the graduation calculation, while individuals from 2003 to 2013 made up the GPA measurement. Overall, the facility helped raise the overall GPA .17 points after its inception in 2007 for all student-athletes, but did not have a significant impact on graduation rates.

Tables

Table 1: Comparison between Ole Miss Student-Athletes, Student Body and the SEC

Cohort Year	Alabama SA	Alabama SB	Arkansas SA	Arkansas SB	Auburn SA	Auburn SB	Florida SA	Florida SB
1999	72	63	64	56	74	62	92	79
2000	73	63	66	56	75	63	89	79
2001	77	65	68	58	77	63	87	81
2002	82	64	70	58	78	64	85	81
2003	81	66	72	59	77	67	82	82
2004	82	67	73	58	76	66	83	84
2005	85	67	72	59	74	66	82	84
2006	86	67	74	60	75	68	83	85

	Georgia SA	Georgia SB	Kentucky SA	Kentucky SB	LSU SA	LSU SB	Mississippi State SA	Mississippi State SB
1999	62	73	71	60	68	56	71	56
2000	65	75	71	59	69	57	76	58
2001	70	77	73	61	69	58	78	58
2002	75	79	73	58	71	59	78	60
2003	77	80	74	60	74	59	80	61
2004	79	81	77	58	78	59	79	58
2005	81	84	79	59	80	60	80	60
2006	83	83	79	59	81	65	79	58

	Ole Miss SA	Ole Miss SB	South Carolina SA	South Carolina SB	Tennessee SA	Tennessee SB	Vanderbilt SA	Vanderbilt SB
1999	74	56	75	65	73	57	93	88
2000	75	56	77	63	75	60	94	89
2001	73	53	76	63	78	58	94	91
2002	77	56	74	67	76	60	94	89
2003	72	61	74	69	74	61	93	91
2004	72	59	77	68	76	60	92	91
2005	76	60	78	70	73	58	91	92
2006	75	58	82	72	75	66	91	92

Note: SB means student body, while SA means student-athlete.

Table 2: Characteristics of Incoming Students

	HS GPA Coefficient	GPA Std. Error	ACT Coefficient	ACT Std. Error
Treatment	-0.07816	0.05847	-.5943	0.4048
TimeTrend	-0.02524	0.00977	-0.1277	0.06767
Constant	3.388	0.0881	22.657	0.6098

Table 3: Graduation and Semester-by-Semester GPA Regression Results

	Grad. Coeff.	Grad. Std. Error	Sem. GPA Coeff.	GPA std. error
Treatment	0.0542	0.0531	0.166	0.0239
ACT	0.0110	0.00388	0.0534	0.0025
HighSchoolGPA	0.198	0.0268	0.612	0.0174
TimeTrend	0.0474	0.0120	0.0195	0.00458
Constant	-0.610	0.138	-0.688	0.0704

Table 4: Ability Distribution Based on ACT Quartile Graduation and Semester-by-Semester GPA Regression Results

	Grad. Coeff.	Grad. Std. Error	Sem. GPA Coeff.	GPA std. error
Treatment	0.0555	0.0531	0.166	0.0239
ACTquartile	0.0277	0.0319	0.0283	0.0200
ACT	0.00322	0.00976	0.0456	0.00602
HighSchoolGPA	0.198	0.0268	0.6101	0.0174
TimeTrend	0.0476	0.0120	0.0196	0.00458
Constant	-0.508	0.181	-0.582	0.103

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