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Teaching Sports Economics through Technology

Abstract:

Although still in infancy, the use of the internet as a means of teaching college courses – including economics of sports – is growing. Previous research concerning the level of student learning in *economics courses* via internet versus traditional classroom has been inconclusive while research on comparing the same results related to *economics of sports* classes barely exists.

This presentation aims to explore the need for and specific characteristics of teaching economics of sport via the internet. First, the paper overviews the specifics of teaching economics of sport for sport management majors in traditional as well as online settings. Based on the data collected through several years of teaching in both settings at the same institution, this study identifies the academic indicators for best student performance in traditional and on-line classes. Finally, the study answers the question of what are the factors influencing student performance in an online economics of sports class and what can educators, who teach such classes online and face-to-face learn from the data obtained.

Keywords: Economics education; sports economics; online teaching; student performance

Introduction

How should a sport management educator prepare students for a rapidly changing industry? This complex question has sometimes been referred to as the debate between the ‘conscience’ and ‘commerce’ of sport management. In a thought provoking article, *The Conscience and Commerce of Sports Management: One Teacher's Perspective*,¹² Hums underlines that current issues, local, national, and international events have molded the sport industry into a shape not seen before. By paraphrasing Thomas Friedman, the world is no longer about walls but about webs. The world is no longer about from whom we are separated but rather with

¹² Hums, M. (2010) “The Conscience and Commerce of Sport Management: One Teacher's Perspective” *Journal of Sports Management* Vol. 24. 1-9.

whom we are connected. Sport managers today face a number of situations never envisioned by those who started the first academic program in sport management at Ohio State University. As new issues emerge, sport management graduates will be forced to make decisions which often place the spirit and the business of sport in opposition to each other. Learning specific skills such as critical thinking and civic engagement, combined with hands on experience, can help students have a framework for making the decisions which will confront them. Thus, the question *what* do we teach to our students remains crucial while building a responsible and rigorous sport management curriculum. Recently, a new dimension should also be added to the discussion on what we teach. Namely, *how* do we deliver the lectures and all the current topics to our students? There are rapidly changing ways in which information is now transmitted. “Our students live in a Twittering, blogging, SMSing, instant messaging, Facebook world, and they must learn how to integrate this technology appropriately in their personal and professional lives, and the lives of their constituents.”¹³ Knowledge is power - but the meaning of that knowledge resides in its responsible use. Delivering different subjects, class contents to our students partially or entirely online has increased dramatically during the last decade. No doubt, using the internet for teaching offers a number of obvious advantages for both, students as well as universities. It allows students to integrate their academic pursuits into their lifestyle by flexible scheduling. Universities have entered the online education market in order to satisfy the growing demand of their students as well as to face their existing and growing financial and facility constraints.

Sports management is a relatively new field of study. In 1980 there were fewer than 20 undergraduate sport management programs in the United States and by 1988 there were still only 95.¹⁴ In 2007, Humphrey and Maxcy counted 143 programs¹⁵ while today the North American Society for Sport Management (NASSM) website lists 360 undergraduate programs.¹⁶ It is fair to say that sports management is exploding as an academic discipline at both undergraduate and graduate level. St John’s University introduced its sport management undergraduate program approximately 36 years ago. Since then the program has grown into a Sport Management Division in its own right as part of the University’s College of Professional Studies currently with 454 undergraduate majors. St John’s also started to offer a graduate degree in Sport Management in September 2007. Recently, it has 66 enrolled graduate students.¹⁷ Courses are offered by 7 full-time faculty— five of them with terminal degree in sport management or a related field - and numerous adjuncts. As the program has evolved and grown thorough the years so did the demand for implementing classes via the internet. Recently, all of the required courses can be completed either online or in classroom. This paper seeks to determine how sport management majors’ performance is affected when they take sports economics classes via the internet rather than in a traditional classroom setting. First, the paper summerizes the specifics of teaching economics of sport for sport management majors. Based on the data collected through several years of teaching in both setting, the study strives to show whether there is evidence for a better student performance in

¹³ Ibid.

¹⁴ Danylchuk K., Boucher R., (2003) “The Future of Sport Management as an Academic Discipline” *International Journal of Sport Management* Vol 4.(4), 281-300.

¹⁵ Humphreys, B., Maxcy, J., “The Role of Sports Economics in the Sport Management Curriculum” *Sport Management Review*, Vol 10,(2), 177-189.

¹⁶ It needs to be mentioned that there will always exist a variation in the number of sport management programs. Several programs are not listed on the NASSM website because of the ongoing debate on what should be considered as a sport management undergraduate program (location among departments, name of the program, or courses taught can be reasons for not being included in the NASSM list)

¹⁷ Voute MacDonald, K., (2012) Annual Plan FY 2014 College of Professional Studies, St John’s University, 22-23.

traditional or in on-line classes. Finally, the study answers the question of what are the factors influencing student performance in an online economics of sports class and what can educators, who teach online and face-to-face economics of sports classes learn from the data provided.

When compared to more traditional fields of study, the economics of sport is a relatively new field of inquiry. First, economists with interests in the field have developed and offered courses in sports economics mostly as upper-level electives for economics majors. These professors became the first to publish in peer reviewed economic journals.¹⁸ At about the same time, a growing number of universities started to offer sport management programs and award degrees to undergraduate students. The North American Society for Sport Management (NASSM) was formed in the late 1980s. NASSM together with the National Association for Sport and Physical Education (NASPE) began the process of accreditation of sports management programs: they created the Sports Management Program Review Council (SMPRC) that published its accreditation standards in 1993. SMPRC established requirements for faculty, curriculum, course content, etc. Certain areas related to economic and financial underpinnings of the sport industry were included in the list, thus, sports management programs started to require students to take a course in sports economics, sport finance, or a combination of the two.¹⁹ Gerstner in his presentation *Teaching Sports Economics for Sports Manager Majors* points out three important and specific characteristics of how to teach future sports managers to understand the financial and economic aspects of the sport industry. First, he offers examples how to modify the content of a traditional economics course by focusing on the application of economic theory to the field of sport. “For example, when discussing the demand for tickets to a sporting event, the role of price elasticity of demand should be considered as to its effect on revenue, rather than proving students with demand data and asking them to calculate elasticity coefficients.”²⁰ Second, the author shares his experience with the reader in relation to translating “mathematical notations into English.”²¹ The reason for this is rooted in the difference in prerequisites for students before entering the majors. While economics majors mostly understand and apply calculus and statistics at a college level and also are interested in economic theory usually, sports manager majors only take algebra and traditionally have little interest in economic theory for its own sake. Third, he shares his experience on designing classroom activities that can satisfy students with different background. “Over the years I have permitted research projects that allow students with good understanding of econometrics to dive into those issues at their own pace, while allowing less prepared students to choose less quantitative topics.”²²

Following Professor Gerstner in teaching the course of Economics of Sports at St John’s University (Queens NY, USA) I took the above mentioned advice and guidelines and tailored my course to the level of preparedness of my students. The course content focuses on economic issues and problems that sport managers are about to face rather than addressing

¹⁸ The 1st paper “The Baseball Players Labor Market” was written by Simon Rottenberg in 1956. Between 1981 and 2004 there were a total of 683 journal articles published focusing on sports economics.

¹⁹ See more on this topic in Gerstner G., (2007) “Teaching Sports Economics for Sports Management Majors” paper presented at the Annual Meeting of the Eastern Economic Association (USA) on February 24, 2007.

²⁰ Gerstner G, (2007) “Teaching Sports Economics for Sports Management Majors” paper presented at the Annual Meeting of the Eastern Economic Association (USA) on February 24, 2007

²¹ Ibid

²² Ibid

questions based on pure economic theory.²³ When St. John's University began to offer the course online faculty had to reevaluate how best to deliver the material asynchronously.

Teaching Economics of Sport via the Internet

Urtel clarifies the difficulty of assessing the concept of 'distance learning' by stating: "[Difficulty]...is especially true given the vast increase and technological developments in (a) the definition of distance education (b) the formats of instruction and interaction (c) the entities who deliver it and (d) the demographics of [those] who receive it."²⁴ A growing number of studies examine the differences in learning outcomes of traditional and on-line classes. Anstine and Skidmore find that on-line courses are less effective than face-to-face courses²⁵. At the same time, Harmon and Lambrinos focus our attention to the existing differences in human capital skills between on-line and traditional learners.²⁶ In Glanz's study, *Student Performance in Traditional and Online Sections of Undergraduate Macroeconomic Course*²⁷ the author focuses our attention to the existing inconsistency of research findings related to the importance and effectiveness of distance learning in higher education – based on two recently published studies.²⁸

St John's University – where we teach - began to offer courses through distance learning in 2000. Looking at the 2012 spring enrollment, approximately 15% of St John's students take at least one class online.²⁹ Based on faculty initiatives, St John's also offers hybrid classes at both, undergraduate and graduate level targeting a very large and diverse audience. It is also important to note, that adjunct as well as full time faculty is equally allowed to teach online classes - after the completion of the "Online Teaching Pedagogy" course. This course is offered through the IT department of St John's University and contains two parts: Pedagogy I and Pedagogy II. Faculty interested in online teaching is able to complete the courses in sequence during two consecutive academic terms. The duration of the classes is 10 weeks. This is an absolute prerequisite for all faculty – even in such cases, when someone has already taught online at another academic institution.

²³ It needs to be mentioned that at St John's University Economics of Sport is an upper level course for sport management majors and it has a prerequisite namely, ECONOMICS I that taught by a faculty of the Economics and Business Administration Division of the College of Professional Studies. Thus, students coming to Sports Economics class expected to know and understand the basic economic concepts.

²⁴ Urtel, M. (2008) "Assessing Academic Performance Between Traditional and Distance Education Course Formats" *Educational Technology and Society*, Vol 11 No. 1. 322.

²⁵ Anstine, J., & Skidmore, M. (2005) "A Small Sample Study of Traditional and Online Courses with Sample Selection Adjustment" *Journal of Economics Education* Vol 18.No. 2. 107-127.

²⁶ Harmon, O., & Lambrinos, J. (2008) "Are Online Exams an Invitation to Cheat?" *Journal of Economic Education*, Vol. 39 No. 2. 116-125.

²⁷ Glanz, S. (2012) "Student Performance in Traditional and Online Sections of an Undergraduate Macroeconomics Course" Paper presented at the International Institute of Social and Economic Sciences Conference in Lisbon, September 9, 2012.

²⁸ "Going the Distance: Online Education in the United States, 2011" the annual report of the Sloan-C can be found at http://sloanconsortium.org/publications/survey/going_distance_2011 "Conflicted: Faculty and Online Education, 2012" research conducted by Inside Higher Education and Babson Survey research Group can be found at <http://www.insidehighered.com/news/survey/conflicted-faculty-and-online-education-2012#ixzz1yYWrbEf8> show inconclusive results.

²⁹ Glanz, S. (2012) "Student Performance in Traditional and Online Sections of an Undergraduate Macroeconomics Course" Paper presented at the International Institute of Social and Economic Sciences Conference in Lisbon, September 9, 2012.

Economics of Sport has been offered in the traditional face-to-face classroom for sports management majors since 1999 at St John's as part of their required courses. Since 2010 students were able to choose between online and traditional setting education while selecting an Economics of Sports class. An online class has been offered during the summer as well as in the Fall or Spring semesters. The class size is maximized at 35 students in traditional and 20 in online classes. Although 56% of students are female at St John's University, the ratio of female students in the Sports Management major is around 10-15% while the number of female students in an Economics of Sports class is approximately two or three, or 8-10%. (see Table 1.)

Tailoring an economics class to the interest and need of sports management majors has always been a challenging task. As it was mentioned above as well as based on the existing literature on teaching in an online setting - the professor needs to make additional adjustments.³⁰ As it shown in Figure 2, in Economics of Sports online classes at St John's University the professor teaching the class used the textbook,³¹ the shown DVDs and videos, the offering of consultation through office hours, and some of the weights in grading, specifically research projects and class participation thorough the semester the same way in both settings. The Powerpoint slideshows used and discussed in the face-to-face course is also very similar to the online classes. Another similarity in my Economics of Sport classes - whether it is in an online or face-to-face format - all of the lecture slides in the PowerPoint format ARE posted for the students BEFORE the class starts. In the case of the face-to-face classes the slideshows are posted online. In the online class at St John's we use the Blackboard system, thus all of the slideshows are posted for each lecture at the beginning of the semester for the whole course content.³² It is safe to say that the course material and structure of the traditional face-to-face course is very similar to the online course with the course split into twelve distinct topics with approximately one week for each topic area.

At the same time, there are existing structural differences in teaching methods between the face-to face and online settings. Namely, in face-to-face class students get homework occasionally at the discretion of the professor, while in online Economics of Sport classes homework assignments are assigned on a weekly basis and their weight in the overall grade is high, approximately 30-40% of students' final grades versus the face-to-face classes where the weight is around 10-15%. The weight of the research project is always the same 30%, although depending on the professor's preference or, in online classes, on the size of the class it can be a group or an individual project.³³ The mentioned 'tailoring' of the content from an economics into a sports economics class while taking into consideration the sports management students' needs in each and every class also presents an additional difficulty when teaching through the Internet. In this case, the course material usually is posted at the beginning of the semester by the professor, ensuring a clear shell for asynchronous

³⁰ For more on that see Urtel, M. (2008) "Assessing Academic Performance Between Traditional and Distance Education Course Formats" *Educational Technology and Society*, Vol 11 No. 1. 322., Harmon, O., & Lambrinos, J. (2008) "Are Online Exams an Invitation to Cheat?" *Journal of Economic Education*, Vol. 39 No. 2. 116-125., Vogel, R. (2011) "Switching Economics Courses from Online Back to the Classroom: Student Performance and Outcomes," *International Journal of Business and Social Science*, Vol.2. No.22. 79-85.

³¹ The used textbook is Fort,R. (2011) *The Economics of Sport* 3rd ed.(Upper Saddle River, NJ: Pearson Education).

³² Recently St John's University switched to back up all of the course with the Blackboard platform that will make teaching in different settings even more similar.

³³ The face to face classes in Economics of Sports are always run at their maximum registration number (35), while the online class depending on the semester when it is offered can vary between 7 and 20: summer being less attractive for the students because of the fact they cannot have financial assistance to enroll in a summer session at St John's University.

communication between the students and the professor during the forthcoming weeks. Namely, the slideshows for each week's lecture, the assigned DVDs or videos to watch and the related questions to their content, the overall evaluation and assessment criteria for each and every assignment as well as for the general performance in the class should be and would be posted to the course website on Blackboard at the beginning of the semester. That means the students can see the general format of the class and understand the requirements as well as the deadline for postings in the respective online class. In the online setting, the professor teaching the class starts to see the students' needs just after the class has already started and the first postings have already been completed by the students.

Finally, a major difference exists between online and face –to-face classes related to testing. Harmon and Lambrinos³⁴ also evaluated the outcomes of proctored and non-proctored exams between online and traditional courses. The results of their study suggest that exam scores tends to be higher in online exams than on proctored exams. Also online students taking proctored exams tended to score lower than face-to-face students did on same proctored exams. The authors also suggested that there were greater probability of cheating taking place in online non-proctored exams than in proctored exams in both the online and traditional face-to-face (or even hybrid) courses. At St John's University in Economics of Sports courses delivered through the internet students do not have structured exams, while in face to face classes students must complete a proctored exam.

While the aforementioned problems underlie and motivate the analysis for this paper, they describe pedagogical issues that do not have definitive solutions. Using a grade production function, where the final grade earned for the Economics of Sport course represents a measure of the student's performance during the semester, we focus on the question of whether the learning environment impacted students' performance across the two teaching formats. The next section of the paper provides the analysis of the grade production function. The conclusions are presented in the final section of the paper.

Table 1. Enrollment in Sports Management Program at St John's University (NY, USA)

Campus	QUEENS			STATEN ISLAND			Grand total	Grand total	Grand total
	Male	female	total	male	female	total			
2009 spring	285	49	334	59	49	108	442	344	98
2009 fall	333	50	383	37	3	40	423	370	53
2010 spring	332	47	379	38	2	40	419	370	49
2010 fall	367	46	413	37	5	42	455	404	51
2011	343	46	389	35	6	41	430	378	52

³⁴ Harmon, O., & Lambrinos, J. (2008) "Are Online Exams an Invitation to Cheat?" *Journal of Economic Education*, Vol. 39 No. 2. 116-125.

spring										
2011 fall	372	56	428		30	2	32	460	402	58
2012 spring	370	61	431		33	2	35	466	403	63

Table 2. Structural Difference: Face-to-face and Online Classes in Economics of Sports

Traditional format (N=64)	Online learners (N=34)
Standard textbook	Standard textbook (same as for the traditional class)
No homework, more focus on class participation and assessment	Online quiz for each chapter in a form of a homework
3 hours of lecture a week (Monday-Thursday schedule)	Electronic bulletin board (blackboard) for asynchronous communication (weekly homework + discussion)
Individual research project related to topics	Group project (depending on class size) using assigned chat-rooms for group works
Videos, dvds, movies are assigned or shown in the classroom occasionally	Assigned videos, movies occasionally
Email to professor and opportunity to asking question after each class in person	Email to professor or asking peers (professor) through discussion board
Office hours on campus	Office hours by appointment
Class participation is crucial and part of the grade	Class participation is part of the grade (evaluation based on postings)

Students' Performance – An Analysis

The analysis is conducted across three online and three traditional courses taught by the same faculty in the 2010, 2011, and 2012 academic years respectively. There are a total of 98 observations from six courses - 34 students have taken the course online while 64 through the traditional classroom format. Specific student attributes such as student GPA, major, gender, and grades in other Economics course that must be taken as a prerequisite before entering the Economics of Sports class are available through St John's Central, a course management system used and utilized by the University. All names have been stripped away from the data so there is no way to trace a particular grade back to the individual student.

The hypothesis we are about to test is that **the final grade of students in online sections will not be different than the final grades of those in traditional classroom sections.**

Students' T-test was used for testing a hypothesis on the basis of a difference between sample means, that is the T-test determines a probability that two populations are the same with respect to the variable tested.

The results of the T-test by using MINITAB are shown in Table 3.³⁵

Table 3. Two-Sample T-Test and CI: regular, online

Two-sample T for traditional vs online courses

	N	Mean	StDev	SE Mean
Regular	64	3.202	0.902	0.11
Online	34	3.01	1.17	0.20

Difference = mu (regular) - mu (online)

Estimate for difference: 0.187

95% CI for difference: (-0.274, 0.647)

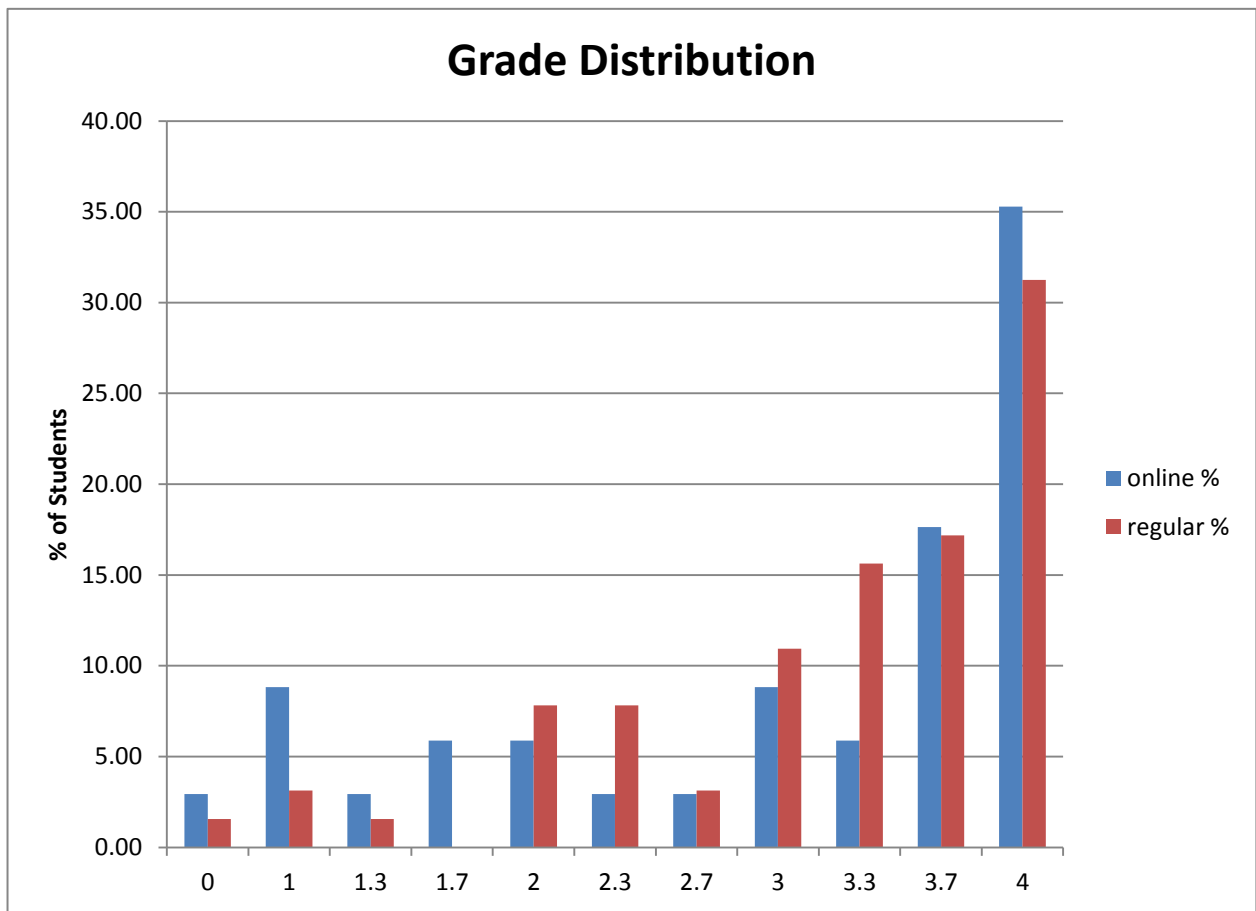
T-Test of difference = 0 (vs not =): T-Value = 0.81 P-Value = 0.420 DF = 54

Since the p value is greater than 0.05 (0.42), we accept the hypothesis that there is no statistical difference between the means of the course grades. The final grade for online students was lower than for traditional students. However, the results were not statistically significant and the 95% confidence interval of the coefficient would include zero. The average grade in the Economics of Sport class for the online students was 3.014 which correspond to a B. The average grade for students in the traditional sections was 3.2, which correspond to a low B+. Figure 1 shows grade distribution between traditional and online classes. The median for the regular class is 3.3 the mean is 3.203, while the same data for the online class are 3.7 and 3.014. As we see the data for the grade distribution for both the online and the regular class is skewed to the left, meaning, the median shifts to the left the second most, and the mode the least affected by the presence of skew in the data.

Looking at the data it is easy to see that the results for both teaching formats are very similar. Whether the course was offered face-to-face or online does appear to matter with students in the online format having an edge in overall grade performance. There may be some self-selection issues regarding students taking these courses online – but since the course is required for sports management majors and they do not know whether the course will be offered online or face-to-face in future semester, many students are likely to enroll in the course when it comes up and fits their planned graduation schedule. It also needs to be noted, that through the existing asynchronous teaching method students in the online classes had greater ability to consult a whole range of course materials while completing course assignments as opposed to students in traditional classroom setting.

³⁵ The measure for student performance was their final grade in the course (Coded A=4.0, A- =3.7, B+ =3.3, B=3.0,F =0)

Figure 1. Grade Distribution between Traditional and Online Courses



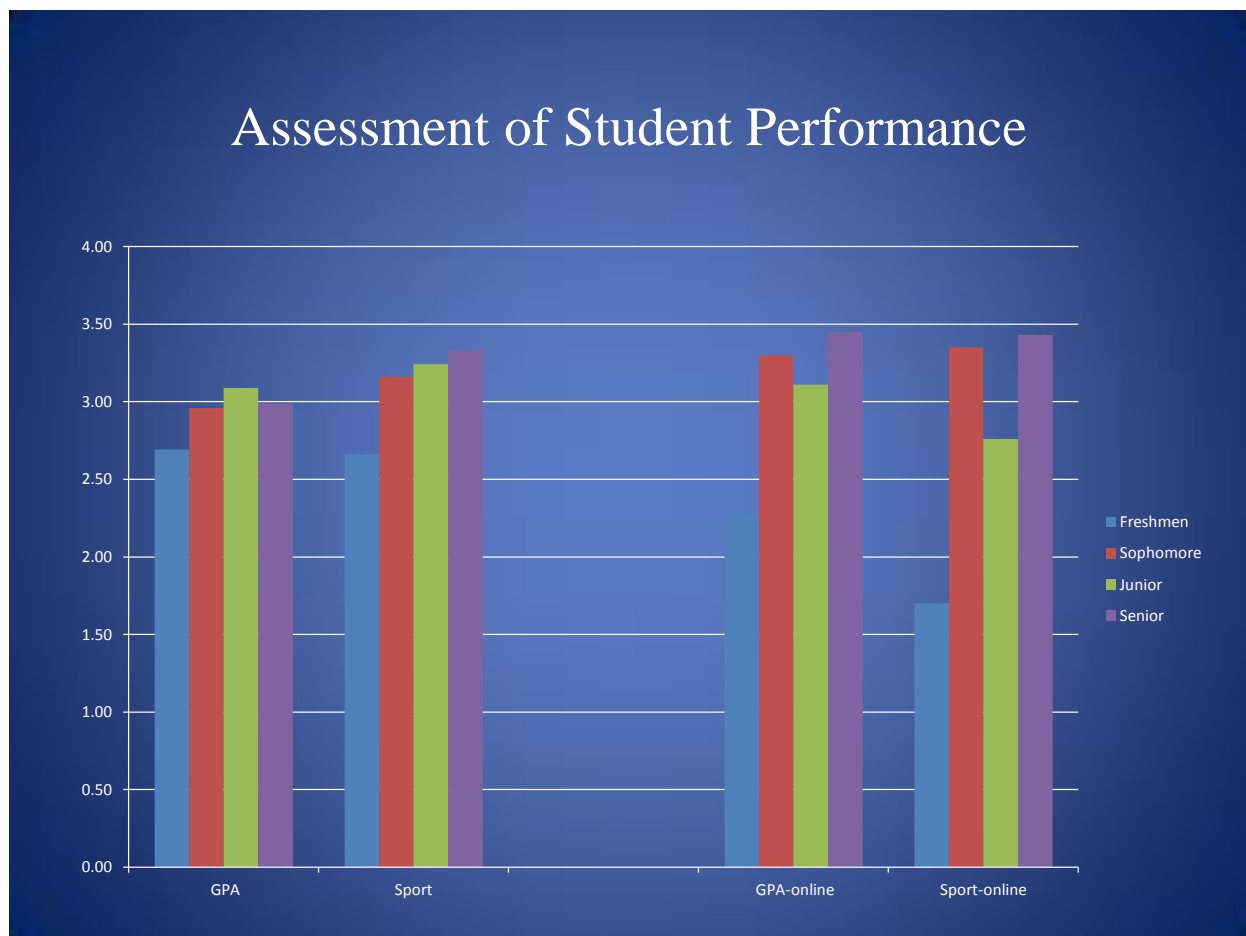
Another explanation for the slightly higher grades in online class can be seen in the higher individual responsibility of students for their own learning outcomes in any online course setting. Also, the fact that students in traditional courses faced fully proctored closed book in-class exams may also have resulted in scores that were lower than in the online format.

The two other variables needed to be examined with respect of our students’ performance in the two course format were the following. First, whether the students’ GPA before enrolling into the Economics of Sports class will show statistically significant impact on students’ performance; and second, whether taking Economics 1001 as prerequisite to Economics of Sport will positively impact students’ performance in the class – taken by the students online or face-to-face.

In relation to students’ GPA before enrolling into sports economics class the data shows that the average GPA for the online students was 3.2, while the average GPA for the traditional sections was 3.01.³⁶ (Figure 2.) This supports the statement that the students in the online classes were more responsible, mature than those in the traditional classes.

³⁶ The sample size here for traditional section students is 62 only, because two students were transfer students and had earned college credits but their GPAs did not transfer over any results as their reports showed 0.

Figure 2. Assessment of Student GPA and Performance in Economics of Sport Classes



At St John’s University the official prerequisite for Economics of Sport course is the Economics 1001, which is a macroeconomics course. The correlation for the grades earned in macroeconomics and Economics of sports courses for the whole cohort is extremely weak (0.06). The reason for this is that students are enrolled in the macroeconomics course usually in their freshman year, while the economics of Sport is an upper-level course. Although microeconomics – Economics 1002 – is not a direct prerequisite for registering for economics of Sport course, completing Economics 1002 is also a program requirement. Since students register for this course later in their university studies, and Economics of Sports examine more microeconomic issues like the wages of professional athletes, the impact of competitive balance on team profits, and the pricing of television rights or public financing of arenas and stadiums, the examination of the correlation between the grades in Macroeconomics and Economics of Sport seem more relevant.

Successful completion of related courses influences the grades earned in sport economics. Although a grade of C or better is eligible for transfer, the value points earned is 0.³⁷ Of the total 98 students in the six examined classes 32 – or 32.7% - students did not have grades posted for Economics 1002. 66 students completed the Economics 1002 – Microeconomics course - at St. John’s University. Of the 66 students, 22 earned a lower grade in Economics of Sport than in Microeconomics, but of these students, only 12 earned a much lower grade, that is, accomplished the classes with more than 0.3 point value point difference between their grade points in the two courses. This means that 44 students earned the same or a better grade in Sport Economics than in Microeconomics, showing the importance of preparedness. (Table 4.)

Table 4. Grade Points of Students in Economics I and Economics of Sports Classes

Grade points	1	1.3	1.7	2	2.3	2.7	3	3.3	3.7	4
Number of students earning this grade in Economic I	2	2	4	6	6	7	8	5	10	16
Number of students in Economics of Sports earning the same or a higher grade	2	2	4	6	6	3	7	2	6	6
Number of students in Economics of Sports earning a lower grade						4	1	3	4	10

As has been noted by all study comparing outcomes between traditional and online formats, the online courses require a certain level of commitment and self-motivation on the part of a student to complete the class successfully. Our data showed that students enrolling in online Economics of Sports class have a slightly higher GPA and yet a slightly lower performance than students in traditional classroom settings. The data shows the positive affect of taking Microeconomics on students’ performance in the Economics of Sports class. At the same time, our analysis also showed that there is no statistically significant difference between students’ performance between online and face to face courses.

Conclusion and Future Research

Online course instructions have become a mainstay on the college campuses all around the country. The main issue facing faculty, administration, accrediting bodies, as well as of course our students regarding this new teaching model is: is it as effective as teaching in the

³⁷ <http://www.stjohns.edu/admission/transfer/credit.stj>

traditional classroom? With scholarly research growing on effectiveness of online versus traditional model of teaching the results of this research is becoming more and more inconclusive. The results of our analysis suggest that there are some differences in outcomes between the two teaching formats. But the existing difference is far from being statistically significant. As an ever larger pool of universities are offering online – as well as hybrid – courses growing number of faculty are starting to teach online or at least, supplement their face-to-face classes with some sort of online content material. Thus, the difference between the two teaching methods has begun to narrow. Thus, there will be a continuing need to evaluate how to better leverage the usage of technology as well as each of these instructional formats. The question we must ask ourselves is not necessarily which mode or format of teaching is better, but most importantly how we, the instructors can use each and every mode or format more effectively for the benefit of our students. This is the line of research we need to continue.