

USING THE ETS MAJOR FIELD TEST IN BUSINESS TO COMPARE ONLINE AND CLASSROOM STUDENT LEARNING

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ABSTRACT

This study demonstrates a method of assessment for an online program of instruction. Based on data taken over the last five years, the study compares the score on the major field test in business (MFT-B) from ETS with the number of core courses taken online, the number of online courses taken at this university, age and the student's GPA in the core courses. No literature was found demonstrating the use of the MFT-B for comparing online and classroom instruction. The data shows that there is no difference in the outcomes for students in online courses and classroom courses. The study will be repeated annually for assessment reporting. Additionally, our study found higher withdrawal rates for online courses when compared to classroom courses.

Keywords: Assessment, Online Business Education, AACSB, Assurance of Learning, Major Field Test, MFT

INTRODUCTION

Research continues to show little difference in student learning between online courses and classroom courses. This general equivalency is clearly demonstrated on Russell's website "*nosignificantdifference*" and in his book [9]. The purpose of his website is to keep the list of studies up to date. Some show that the classroom is a better delivery system while others show that online students perform better, but the preponderance of evidence is that they are equivalent. In a survey done by WCET and Campus Computing Project 84% of higher education administrators believed that student outcomes were the same at their institutions [7].

The methods used to compare student outcomes in these studies include projects, research papers, portfolios, qualitative, and quantitative data [13]. The use of student's GPA has also been used in some large studies [8]. Koch's large study looked at over 25,000 student registrations. The purpose of his study was to find factors of success. Most research in now

focusing on best practices [6]. Even so, it is important to assess the outcomes at each university.

It cannot be assumed that the technology is being used effectively; therefore the learner's outcomes should be measured and compared. This assessment can assist the faculty in finding the strengths and weaknesses that exist in the online courses. One of the main purposes of assessment is to continuously improve instructional delivery, regardless of the delivery method.

A report by the Institution for Higher Education Policy listed several problems with research in distance learning. Included in the list was research on individual courses instead of programs and a lack of longitudinal studies [4, 14]. This study addresses both of these issues.

Most accrediting agencies and universities require departments to demonstrate that their online and classroom courses are equivalent. For a school of business, the AACSB requires that:

"Schools will be expected to describe the amount of effort normally required for the degree. The descriptive characteristics will differ by the pedagogical and delivery characteristics of the degree. Traditional, campus-based, education may be described by contact hours, credit hours, or course equivalencies. Distance learning programs may require other metrics and may depend more heavily on demonstration of the learning outcomes. The school should assist accreditation reviewers by clarifying the delivery modes and the kinds and extent of student effort involved in degree programs [1].

The Higher Learning Commission's handbook states that a core component of student learning and

effective teaching is “The organization creates effective learning environments [11]. Therefore, the university must demonstrate that its online courses are equivalent to the classroom courses and that both are effective. Our university has created an Online Learning Council, with a full time director, to manage the online course offerings. This council has focused its efforts on controlling inputs instead of measuring outcomes. They have set up guidelines that promote consistency [10], use an outside peer reviewer [5, 12], encourage the use of creating a collaborative environment, require training for all online faculty and consideration for different learning styles [2].

Each department prepares an assessment report annually which includes online assessment of learning. Random samples of students’ work are scored on a rubric to assess competency in the schools goals.

These reporting requirements are due in part to the fact that distance learning enrollments have been growing for more than a decade and are anticipated to grow at an ever increasing rate [7]. One reason for the increase is that students believe that they are receiving an equivalent learning experience [3].

The purpose of this study is to demonstrate a method of research to show that the online courses are equivalent to the classroom courses offered in the school of business at our university. The results are also used, along with individual course assessment, to find strength and weaknesses in the online program. Additionally, the results will assist in fulfilling the requirements of AACSB, The Higher Learning Commission and our university’s assessment reporting requirements.

Description of the Study

The school of business offers an undergraduate degree in Business Administration (BBA). The students can major in Accounting, Marketing, Finance, Management or General Business, which are composed of core curriculum, followed by major courses. This core consists of thirteen courses in business knowledge and skills that the faculty has determined to be necessary for all business students to have, regardless of their major. Beginning in 2005, all core courses and management courses are offered as both online and classroom courses. That same year the school began using the web-based major field test in business (MFT-B) from ETS.

The study compares the scores on the (MFT-B) with the percent of core courses taken online, the percent of core courses taken at this university, age, and the student’s grade point average (GPA) in the core courses. Although many universities use the MFT-B in their assessment, we have not found a study that uses this test to validate its overall online offerings. The study used data from all graduating students over a four year period who took the MFT-B, n=136. Because the students self selected themselves into online courses, there was a concern that a greater number of higher achieving students might have selected the online courses. A comparison of ACT scores and the number of online courses that a student enrolled found no correlation with $r=0.092$.

Data Collection

Table 1 shows the summary data for the four years of data collected of graduating seniors from 2005-2008 who took the MFT-B. Column (3) shows that over 22% of all core courses taken were online, with some students taking over 50% of their courses online. Column (4) shows the heavy influence of the feeder schools and transfer students with the average number of courses taken elsewhere around 24%.

Table 1. Summary Statistics of MFT-B Students Who Earned BBA from 2005-2008 (n = 136)

(1) Descriptive Statistics	(2) MFT-B	(3) % of Core Taken Online	(4) % of Core Taken at Host University	(5) Student Age	(6) GPA
Average	153	22%	76%	29	2.99
Standard Deviation	13	18%	18%	6	0.57
5 percentile	133	0%	54%	24	2.00
95 percentile	176	55%	100%	43	3.82

Assumptions and Analysis

Five null hypotheses were proposed involving the MFT-B and are shown in Table 2, and multiple linear regression was used to test for relationships. Table 3 shows the multiple linear regression output.

Prior to investigating the hypotheses, multiple regression assumptions were tested. Figure 1 shows that residuals were approximately normal. Also, no correlation existed between variables except that age is inversely correlated (-0.40) with percentage of core courses taken at the host university. If used to forecast, the model would need to consider these two variables together, and not independently. Finally, the Durbin-Watson statistic was 1.92, showing no autocorrelation between observations.

It would be expected that there is a relationship between GPA and the MFT-B and is not surprising to find that $R^2=0.26$. This means that 26% of the variation in the MFT_B can be explained by the independent variables. Looking at the t-score and P-

value for each independent variables, only the GPA is shown to have a relationship with the MFT_B.

Charts of the individual factors and their impact on the MFT-B scores are shown in Figures 2 – 6.

Figure 2 shows no evidence that MFT-B scores are influenced by how many online courses are taken. If there were a problem with the online courses, the students who take more online courses would score lower on the MFT-B. Figure 3 shows no evidence that students who take core classes elsewhere have an advantage or disadvantage in learning as measured by the MFT-B. This was a concern because some of our students take accounting courses at a nearby Community College. Figure 4 shows a very weak relationship that older, non-traditional students may score lower than traditional students between the ages 20 and 30. Figure 5 shows that a moderate relationship between the MFT-B and GPA does exist. Figure 6 shows that scores have not significantly changed in the last four years.

Table 2. Null Hypotheses for the MFT-B

Null Hypothesis, H_0 : No relationship exists between learning as measured by the MFT-B and ...

- (1) percentage of online business core courses taken
 - (2) percentage of business core courses taken at home university
 - (3) student age
 - (4) GPA
 - (5) Year the exam was taken
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Table 3. MS-Excel Multiple Linear Regression Results

<i>Regression Statistics</i>					
Multiple R	0.51				
R Square	0.26				
Adjusted R Square	0.23				
Standard Error	11.09				
Observations	136				
ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P-Value</i>
Regression	5	5510.53	1102.11	8.96	0.00
Residual	130	15993.00	123.02		
Total	135	21503.53			
	<i>Coefficients</i>	<i>SE</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	121.92	11.75	10.38	0.00	
%_Core_Online	-3.41	5.58	-0.61	0.54	
%_Core_at_Host_University	-1.18	5.94	-0.20	0.84	
Age	-0.16	0.17	-0.96	0.34	
GPA	10.69	1.71	6.27	0.00	
Year	0.92	1.15	0.80	0.43	

Figure 1. Multiple Regression Residuals

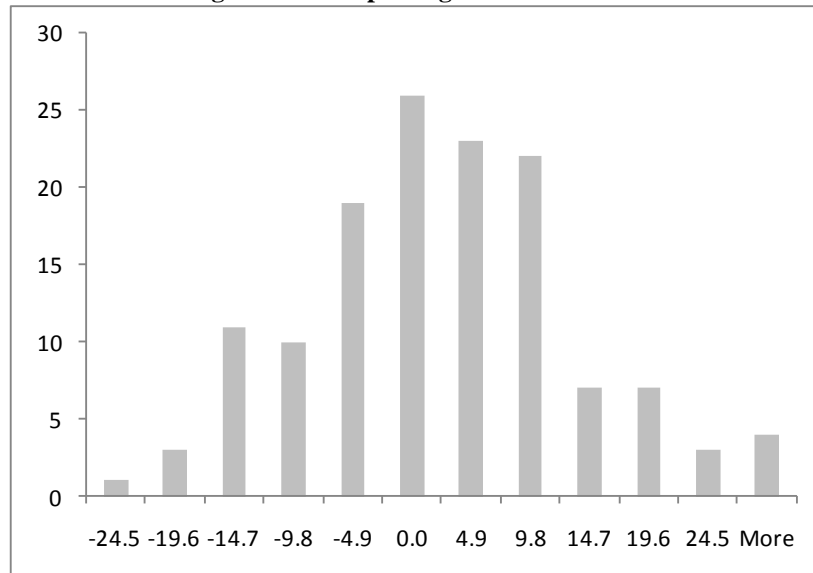


Figure 2. MFT-B vs. % Online Business Core Courses

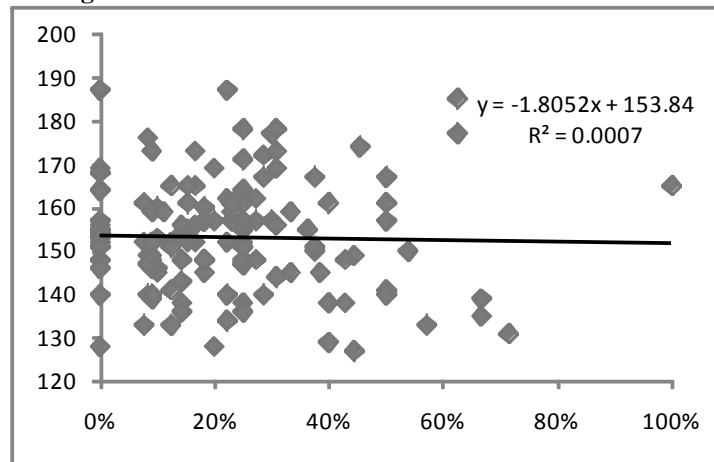


Figure 3. MFT-B vs. % Business Core Courses Taken at the BBA University

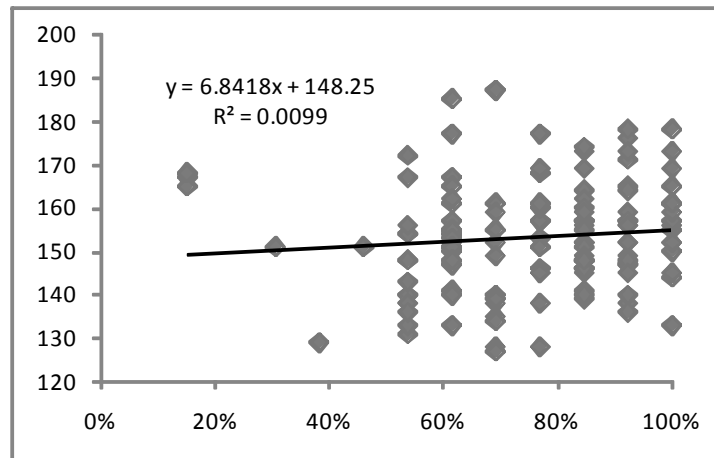


Figure 4. MFT-B vs. Student Age

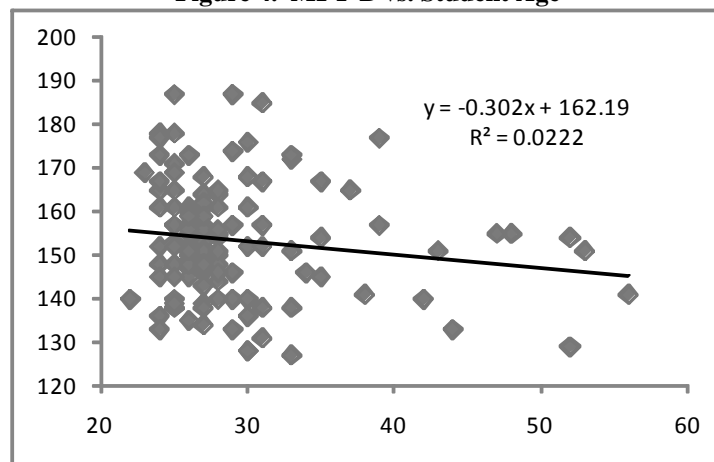


Figure 5. MFT-B vs. GPA

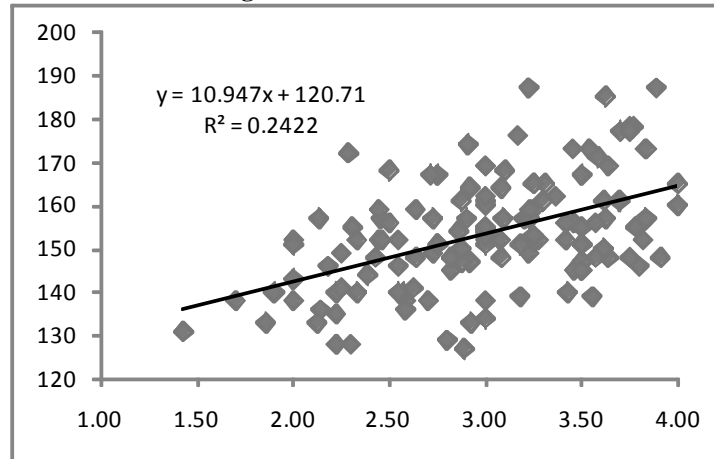
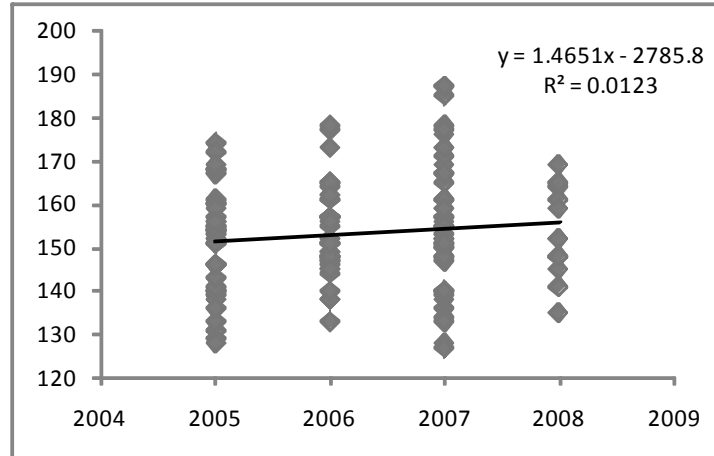


Figure 6. MFT-B vs. Year



One other item that was addressed was the withdrawal rate for online and classroom courses. The percentage of withdrawals in online courses was significantly higher than in classroom courses at the home university with $z=4.857$.

Conclusions and Recommendations

The results show that at this time, there are no significant difference in the overall online program and the classroom core classes in the school of business. There are, however, areas that could be improved. Further study needs to be done to determine why the withdrawal rate is higher in online courses. Also needing further study is the fact that older students score slightly lower on the MFT-B.

This study will be repeated every year and the results included in the assessment reports for the university

and AACSB. It must be determined how many years of data to include in future studies.

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