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An analysis of a learning gap in a business communication course

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Author Note

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Abstract

This research paper investigates how GPAs and mastery of prerequisite writing skills affect student learning in a business communication course offered during the Spring 2016 semester at The College of The Bahamas. To measure the importance of writing skills, the researcher used students' GPA as a criterion of comparison. GPAs of 3.0 or better with a GPA of less than 3.0 among the remaining students enrolled within the course were investigated. A comparison between the two students groups using project scores, prerequisite courses, and GPA data can be used to determine what were done to help decrease the learning gap among students or make it disappear altogether.

Introduction

A major purpose of a business communication course is to help students to improve their writing and digital media skills. Many instructors who teach this course argue that a well-structured business communication course is able to aid student learning by assisting with the improvement of their business writing competence for both the college environment and the workplace. In a business communication course, students learn to prepare cover letters and resumes, to plan a business meeting, and to draft reports and business proposals. These skills help business majors to become effective in the workplace and within society (Russ, 2009). At The College of The Bahamas, business communication has become a general education course; open to all students for enrollment. Students are required to take two college writing courses as pre-requisites for the course. Data suggests that some students succeed academically in such college writing courses and others fail to perform on par with their peers. The variations in GPA and preparedness for corresponding courses are a testament to this fact. Disparities that occur in learning are called gaps (Terry, de La Harpe, & Kontour, 2016; Russ, 2009). According to S. Abbott (2014), a learning gap “refers to the relative performance of individual students—that is, the disparity between what a student has actually learned and what he or she is expected to learn at a particular age or grade level”. For students enrolled in the business communication course, the gaps centered on their writing proficiencies.

This paper will investigate whether a strong linear relationship exists between business communication students writing prerequisite skills, GPAs, and their final project scores. The categorical variables for this study are gender (male or female) and student major (business or non-business major). A comparison of the mean project scores with the pre-requisite skills from ENG 119 & 120 will take place to see if they are equal:

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$H_0: \mu_{ps} = \text{higher passing score}$

$H_A: \mu_{ps} \neq \text{higher passing score}$

Data Collection and Sampling

The data collected for this study was retrieved from the Registrar's Office and from the records of students who took the business communication course offered in Spring 2016; all data was obtained with written permission and consent of the students. Data for this study was accessed with permission from the students and used to analyze grade scores from final projects to see whether a relationship exists between scores from those projects, incoming prerequisite skills, and student GPAs. To accurately assess the data, the researcher must ensure that 100% feedback from data is obtained for the sample to be valid.

Data provided by the students enrolled in a business communication course for Spring 2016 was the focus of this research project. Many of the business majors had strong academic skills, but there were others who needed greater levels of assistance based on pre-assessments surveys performed. This research project investigates student performance based on their prerequisite knowledge, overall project scores and reported GPAs. Based on the reported results of the study, the researcher wants to determine if there is a statistical significance. Another outcome of this study will be to determine what can be done to structure the business communication course to better serve students that enter the course with weaker writing skills.

Hypothesis

The categorical variables for this study are gender (male or female) and student major (business or non-business major). The quantitative variables are student GPAs, grades from prerequisite language classes, and final project scores for $n=25$ (total student population) in a business communication course. The hypothesis for this study is that there is a not a positive

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correlation between project scores and student GPAs and success in the course. A comparison of the mean project scores with the pre-requisite skills from ENG 119 & 120 will take place to see if they are equal:

$$H_0: \mu_{ps} = \text{higher passing score}$$

$$H_A: \mu_{ps} \neq \text{high passing score}$$

Summary Statistics

A total of 25 students were enrolled in a business communication course during Spring 2016. The mean for student GPA is $M=3.10$, *Standard Deviation* is 0.41, Range is 1.77, the *Minimum value* is 2.09, the *Maximum value* is 3.86. The statistics for skewness and kurtosis, reported in the table below, are at -0.364 and 0.324. The business communication project scores were $M=24.08$, $SD=3.59$, $Range=11.00$, the minimum value is 19.00, and the maximum value is 30.00. The skewness is 0.181 and the kurtosis is -1.369. The descriptive statistics for the English 119 and English 120 prerequisite courses are also reported (Table 1).

Descriptive Statistics										
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GPA	25	1.77	2.09	3.86	3.1044	.41012	-.364	.464	.324	.902
COMM211 Project Scores	25	11.00	19.00	30.00	24.0800	3.59305	.181	.464	-1.369	.902
English119 Prerequisite	25	30.00	70.00	100.00	85.1600	8.59108	-.577	.464	-.562	.902
English120 Prerequisite	25	39.00	60.00	99.00	82.6000	10.12423	-.226	.464	-.283	.902
Valid N (listwise)	25									

Table 1: Descriptive Statistics for Spring 2016 Business Communication Students

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A student, who scores a passing grade or above is generally permitted to enroll in a business communication course, receiving a passing grade, suggests that the student has the skills necessary to move on to the next level. However, not all students who receive passing marks in a course develop and retain those skills. Many students who pass the entry-level writing courses were first required to complete remedial English courses upon their arrival at the college. These students were already at a disadvantage compared to students who matriculated with greater writing competency.

Table 1 is a nominal breakdown of GPA by Gender (male=0 and female=1) and Project Scores.

GPA	COMM211 Project Scores	Gender Code
3.13	25	0
2.5	20	0
2.55	20	1
3.1	29	1
2.7	22	0
3.2	28	0
2.77	20	0
3.3	27	1
2.8	23	0
3.7	30	0
2.09	20	0
2.9	25	1
3.08	28	0
3.86	30	0
3	20	0
3	28	1
3.35	26	0
3.3	24	0
3.4	25	0
2.9	23	0
3.5	27	1
3	19	1
3.3	22	1
3.7	20	1
3.48	21	1

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Figure 1 showed that female students had slightly higher GPAs and project scores compared to their male counterparts matriculating in the same course. This could point to a number of factors. Based on the researcher's observation—females turned in assignments on time and properly completed, were always present at the start of the course and posed more questions about the content taught in the course. Showing this type of interest is possibly a good measure of deep, conceptual learning.

Gender = 0 (Male)

Gender = 1 (Female)

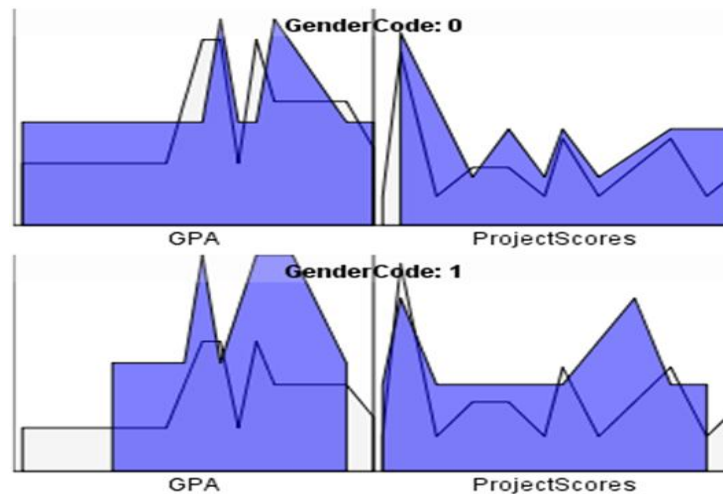


Figure 2 Project Scores by Student Gender (Line chart)

Prerequisite Grade Frequency

A frequency distribution shows that the data is normally distributed (See Table 2 below). As illustrated below, a large number of students reported that their overall score ranged from 80% to 100% for the English 119 prerequisite (See Figure 2). More than a quarter of the students scored a grade of 90 and above in English 119. Based on the analysis of the grades for English 120, students did not perform as well and this could possibly be the result of more academic

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rigor and advance writing in English 120 amongst students who are not traditional native speakers of that language. The English 120 prerequisite, the distribution was positively skewed (See Figure 3).

English119 Prerequisite					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	70.00	3	12.0	12.0	12.0
	71.00	1	4.0	4.0	16.0
	75.00	1	4.0	4.0	20.0
	78.00	1	4.0	4.0	24.0
	80.00	1	4.0	4.0	28.0
	82.00	1	4.0	4.0	32.0
	84.00	1	4.0	4.0	36.0
	85.00	1	4.0	4.0	40.0
	86.00	1	4.0	4.0	44.0
	87.00	1	4.0	4.0	48.0
	88.00	2	8.0	8.0	56.0
	89.00	2	8.0	8.0	64.0
	90.00	3	12.0	12.0	76.0
	92.00	2	8.0	8.0	84.0
	93.00	1	4.0	4.0	88.0
	95.00	2	8.0	8.0	96.0
	100.00	1	4.0	4.0	100.0
Total		25	100.0	100.0	

Table 2:
Frequency
Distribution

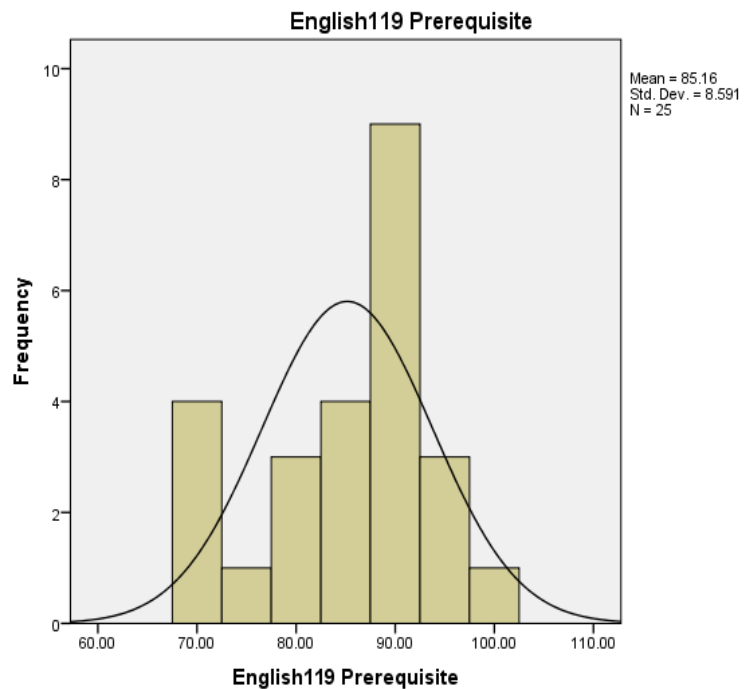


Figure 2: Histogram for English 119 Prerequisite

English120 Prerequisite						
		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	60.00	1	4.0	4.0	4.0	
	65.00	1	4.0	4.0	8.0	
	71.00	1	4.0	4.0	12.0	
	72.00	1	4.0	4.0	16.0	
	75.00	2	8.0	8.0	24.0	
	78.00	2	8.0	8.0	32.0	
	79.00	1	4.0	4.0	36.0	
	80.00	3	12.0	12.0	48.0	
	81.00	2	8.0	8.0	56.0	
	85.00	2	8.0	8.0	64.0	
	86.00	1	4.0	4.0	68.0	
	90.00	2	8.0	8.0	76.0	
	91.00	1	4.0	4.0	80.0	
	95.00	2	8.0	8.0	88.0	
	96.00	1	4.0	4.0	92.0	
	98.00	1	4.0	4.0	96.0	
	99.00	1	4.0	4.0	100.0	
	Total		25	100.0	100.0	

Table 3: Frequency Distribution

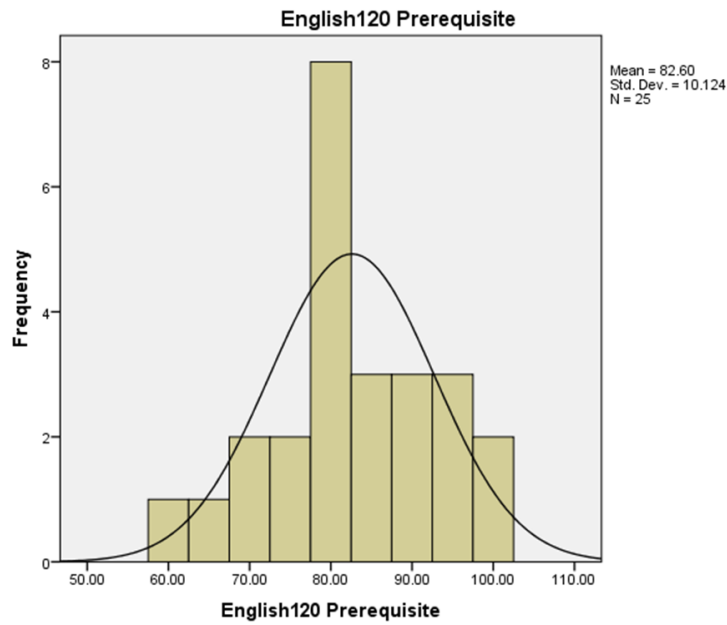


Figure 3: Histogram for English 120

ANOVA

An ANOVA analysis was performed to determine whether there was a relationship between overall student GPA, scores on the student’s final project in the business communication course, and overall grade from prerequisite courses taken. The researcher wants to determine whether skills learned from ENG 119 and ENG 120 college writing classes have a positive correlation to student project scores in a business communication course. The researcher wants to determine whether success in previous writing courses leads to success in more sophisticated writing courses. To show whether, in the continuum of these courses, writing competency is improved and skills acquired are retained and built upon.

The results shows that the three predictors demonstrate a variance of R-squared=0.76, F (3, 21) =22.08, p>0.01. See Tables 4 and 5 for the model summary and the one-way ANOVA results.

The p-value demonstrates a significant correlation among the variables presented at p=0.01, using this 2-tailed test result.

Table 4: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871 ^a	.759	.725	.21513

a. Predictors: (Constant), English120 Prerequisite, COMM211 Project Scores, English119 Prerequisite

Table 5: ANOVA Results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.065	3	1.022	22.075	.000 ^b
	Residual	.972	21	.046		
	Total	4.037	24			

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a. Dependent Variable: GPA

b. Predictors: (Constant), English120 Prerequisite, COMM211 Project Scores, English119 Prerequisite

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
GPA	Between Groups	.103	1	.103	.602	.446
	Within Groups	3.934	23	.171		
	Total	4.037	24			
English119 Prerequisite	Between Groups	.060	1	.060	.001	.978
	Within Groups	1771.300	23	77.013		
	Total	1771.360	24			
English120 Prerequisite	Between Groups	54.000	1	54.000	.516	.480
	Within Groups	2406.000	23	104.609		
	Total	2460.000	24			
COMM211 Project Scores	Between Groups	1.307	1	1.307	.097	.758
	Within Groups	308.533	23	13.414		
	Total	309.840	24			

The results from the Spring 2016 semester were typical of a positive relationship between final project scores and GPA. Students with high project scores also had better overall GPAs. The scatter plot shows a perfect positive linear association. This means that final project scores and the current student GPAs as reported had a strong correlation. There was one outlier that intersects between a score of 20 and a GPA that is slightly above 2.00. See Figure 4.

The linear R squared averaged 28%, which correlated more strongly with student project scores than with grades from the prerequisite courses. The equation is $r^2 = 0.28$.

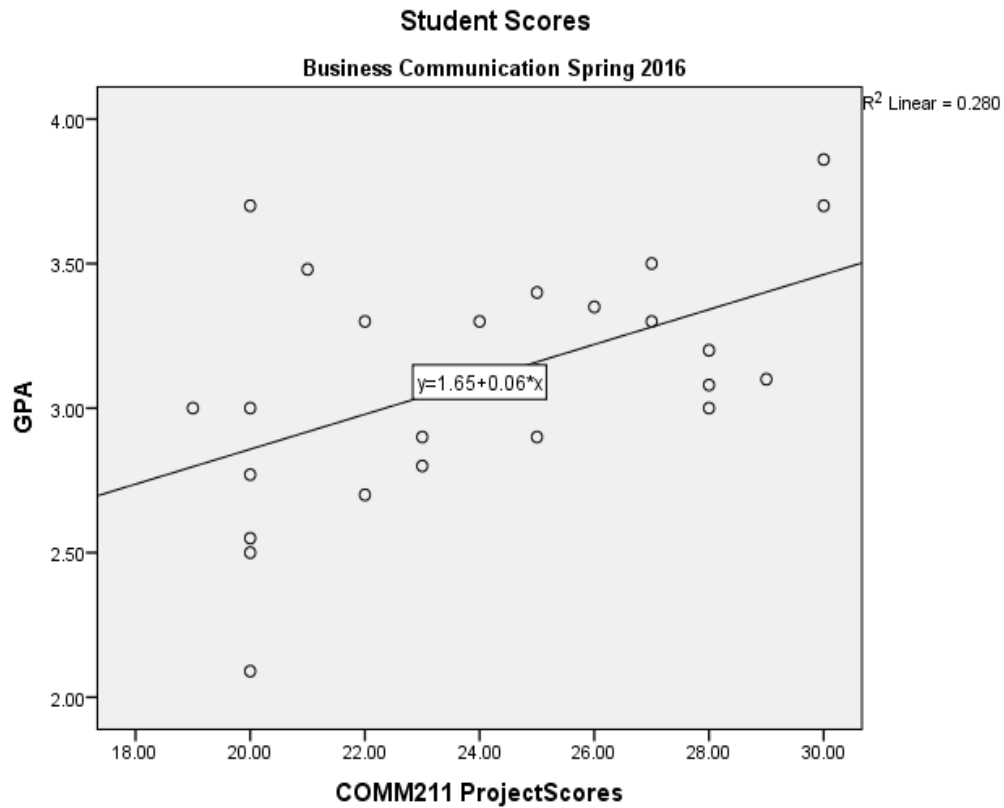


Figure 4 – Scatter Plot of Student Project Scores and GPA

Conclusion

Business communication students who intend to perform well academically must appropriately acquire the prerequisite skills needed to build academic success and decrease learning gaps. For this semester studied, the learning gap was defined as the ratio between the average scores of the well-prepared students and the average scores of students who did not perform on par with their peers.

The hypothesis of this was that a student with strong prerequisite skills (PS) will likely obtain a high final project score and obtain a better GPA in a business communication course is true. The linear regression model was used to test this hypothesis.

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One outcome that emerged from this research was that there were at least a few students who had GPAs above a 3.0 who did not do well in the business communication course because they did not develop or retain the skills they are supposed to have. The researcher further concludes that simply taking a prerequisite course does not guarantee that a student has the prerequisite skills. Additionally, students who perform well and apply skills from prerequisite courses are better prepared to perform well in advanced courses. These results are consistent and support the constructivist theory of learning that indicates that students use old knowledge to build new knowledge (Jonassen, 1999).

References

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Appendix

GPA	COMM211 Project Scores	ENG119Grades	ENG120Grades	Gender Code	Student Major
3.13	25	90	95	0	Yes
2.5	20	70	72	0	Yes
2.55	20	70	71	1	Yes
3.1	29	88	85	1	Yes
2.7	22	78	75	0	Yes
3.2	28	95	91	0	No
2.77	20	75	78	0	No
3.3	27	89	80	1	Yes
2.8	23	80	75	0	No
3.7	30	100	90	0	Yes
2.09	20	71	65	0	Yes
2.9	25	70	60	1	Yes
3.08	28	90	99	0	Yes
3.86	30	95	86	0	No
3	20	84	79	0	Yes
3	28	88	81	1	Yes
3.35	26	92	96	0	Yes
3.3	24	89	80	0	Yes
3.4	25	87	98	0	Yes
2.9	23	82	78	0	Yes
3.5	27	90	95	1	No
3	19	85	80	1	Yes
3.3	22	86	81	1	Yes
3.7	20	93	90	1	Yes
3.48	21	92	85	1	Yes

0 = male
1 = female
Yes = business major
No = Non-business major