

Comprehension of English Text Among Saudi Arabian and American Undergraduates

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Abstract

Reading comprehension was investigated between undergraduates at a university in Louisiana, United States ($n = 17$) and an English-based university in Saudi Arabia ($n = 41$) for the purpose of comparing variance and proficiency. Comprehension was measured with an 8th grade curriculum-based measure administered in English. The research hypothesis of a larger proportion proficient (60% or higher) from the university within the United States (99%) than the proportion proficient from an English-based university in Saudi Arabia (49%) was revealed in data ($X^2 = 10.49$, $p = .0012$). Greater variance in reading comprehension was expected at the English-based university in the non-English speaking country because of non-standardization of English instruction in k-12 programming. Analysis of sample variance in student data from Prince Mohammad bin Fahd University ($s^2 = 11.575$) and Northwestern State University ($s^2 = 4.639$) confirmed this expectation.

Key words: Chi-statistic, International Education, English Proficiency, Globalization, Higher Education

Public Interest Statement

Differentiating and scaffolding support according to student performance level is a staple of 21st century American education. In English-based universities, a student's level of English proficiency affects academic performance. The support needed to address the low academic performance of undergraduates who are non-proficient or emerging proficient in English differ from the interventions, strategies, and programming supports commonly in place for low performing students who are English-proficient. Concerns regarding how best to support bilingual students in higher learning environments will become more prevalent as population shifts increase the number of students entering universities in the United States who are not fluent speakers, readers, or writers of English. The current small comparative study is best viewed as a preliminary observation that contributes to scholarship by verifying significant difference in English proficiency and variance of reading comprehension in English do exist between two small samples of undergraduates from English-based universities.

1. Introduction

Universities are now ranked on a global scale, and those universities interested in maximizing their international identity are English-based. The rising trend towards international comparisons among higher education environments is associated with globalization, including cross-border influxes, people mobility, and a networked world (Marginson & Wende, 2007). The language of research is English, and global rankings “are tailored to science-strong and English-speaking universities” (Marginson & Wende, 2007, p. 306). English proficiency level affects academic progress (Fakeye, 2014) and is a prerequisite for learning in English-based higher learning environments.

The effects of globalization in higher education is more than internationalization. As universities abroad hire English-speaking professors to teach in their English-based programs, from Singapore to Saudi Arabia American professors are bringing their educational experiences and expertise with them across the globe. The opportunity of bringing what worked locally to new students in faraway places is an adventure that holds potential for transforming curricular

approaches and improving student learning. Curriculum-based measurement, a common instructional tool in American schools that is less recognized in k-12 settings worldwide, is but one example.

The importance of English proficiency for students in English-based universities, especially Middle Eastern universities, and the inconsistencies of k-12 English instruction in non-English countries were themes central to the study framework. English-based universities in non-English speaking countries prepare students for global citizenry, as well as build cross-border connections and global partnerships that increase understandings and respect pluralism. Abdo and Breen (2010) observed, “The political and global implications of increasing understanding of the English language in Jordan and other areas of the Middle East cannot be overestimated” (p. 48). Individuals in non-English speaking countries, however, may fail to recognize the importance of English proficiency for accessing expansive knowledge bases and participating in commerce, cross-cultural communications, and international relations worldwide. English proficiency is not a necessity of everyday practicalities in non-English speaking countries (Abdo & Breen, 2010). Moreover, how and when English is taught in elementary, middle, and high schools in non-English speaking countries is unregulated and inconsistent.

2. The Study

The current study compared reading comprehension levels between female education majors at Northwestern State University (NSU) in Natchitoches, Louisiana and female students in Core Arts and Sciences at Prince Mohammad bin Fahd University (PMU) in Al Khobar, Saudi Arabia. All students were undergraduates. Data was collected with a curriculum-based reading comprehension measure. Curriculum-based measurement was suitable for exploring a central study inquiry: Are students in English-based universities in non-English speaking countries adequately prepared to read, write, and discourse academically in English at the collegiate level? The purpose of the present study was to (a) compare variance in scores from reading comprehension assessments conducted in English between NSU and PMU undergraduates, and (b) compare reading comprehension proficiency between NSU and PMU students. The following research hypotheses were developed based on a review of literature and faculty experience at both universities:

H1. Reading comprehension variance will vary significantly by university.

H2. Reading comprehension proficiency will vary significantly by university.

3. Methods

3.1 Data Collection

Data was gathered at the end of the Spring 2014 semester at PMU and at the beginning of the Fall 2014 semester at NSU. The data collection instrument was the web-based EasyCBM™ (2012) curriculum-based measurement platform, which is a curriculum-based assessment tool distributed by Houghton Mifflin Harcourt. Student rosters were uploaded to the EasyCBM™ program as Excel csv files. The EasyCBM™ teacher version (EasyCBM™ Lite) is free, and a district license is available for a fee. The following information from a press release described the assessment tool:

Initially developed in 2006, easyCBM™ was developed with federal guidance to be a key component of a district's response to intervention program. Earlier versions of the product only covered K - 4 reading for classroom use, but have now expanded to K - 8 reading and mathematics for district wide implementation. Since easyCBM™ is computer administered, student performance and progress is managed in real time, while educators spend less time having to enter data on their own...

Currently, there are more than 6.5 million easyCBM™ tests being administered each year, with over 163,000 teachers relying on the data for their instruction. EasyCBM™ is an approved tool by the National Center for Response to Intervention.

(EasyCBM™, 2012, para. 2-5)

Assessments were completed in an online environment of student choice, such as home or school.

The highest grade level of EasyCBM™ reading comprehension was 8th grade level. The 8th grade assessment was viewed as appropriate for the purpose of comparing the reading proficiency of college students because reading comprehension is not routinely taught and assessed specifically at secondary and post-secondary levels. Although reading comprehension may be addressed through interventions or developmental coursework, students typically use reading comprehension skills at higher levels in coursework, such as English 1 or American Literature.

Assessments contained a reading passage and 20 multiple choice questions. One of following three trials of the reading comprehension assessment were assigned to students: The Camel's Back, The Hedgehog Experience, and The Not So Bad Bully. Student scores were banked in the web-based data management system of EasyCBM™ as students completed testing.

3.2 Participants

Research participants were selected by convenience sampling. Participation in the study was voluntary. All participants were female undergraduate students. Students from PMU were in the university's core program and students in one of three of the authors sections of Writing and Research. Prince Mohammad bin fahd university students were bi-lingual students who had moved up from the university's prep program and, as such, were accustomed to having their English proficiency examined. Students from NSU were enrolled in the elementary education teacher preparation program. All students were advised that professor research was the purpose of the reading comprehension assessment and student performance on the reading assessments would not impact student grades in university coursework.

Total number of students invited to participate in the study was 70 from PMU and 29 from NSU. This total number reflected beginning of semester rosters, but did not accurately represent the actual number of students. Several students were on beginning rosters, but did not attend for various reasons (i.e., no shows, dropping the course, and switching course sections because of scheduling conflicts). The actual number of students from each university who completed a reading assessment was 17 from NSU and 41 from PMU. The total study population was 58, with a response rate of 58.9%.

3.3 Variables and Data Analysis

University was the independent study variable. The two categories of university were Northwestern State University (NSU) in Natchitoches, Louisiana, USA and Prince Mohammad bin fahd University (PMU) in Al Khobar, Saudi Arabia.

Variance in student reading comprehension scores and reading comprehension proficiency were dependent variables. Total reading comprehension scores of the present study ranged from 5 to 20. A reading comprehension proficiency variable was created through recoding by collapsing variable categories into one of two categories: proficient and non-proficient. Proficiency was defined as a reading comprehension score of 60% (12/20) or greater. Statistical significance was determined at a threshold of .05. Descriptive statistics for reading comprehension and reading proficiency are shown on Table 1.

A scatterplot and histogram were created to visualize data and observe frequency distributions (Figure 1). An analysis of sample central moment, as measured by sample variance (s^2), was conducted to investigate the study hypothesis of differences in comprehension variance by university and confirm observations visualized in data. Sample variance reliably estimates population variance by measuring deviations and the frequency of deviations (Grinstead & Snell, 1998). The F-Test Two-Sample for Variances was also conducted.

The Chi-statistic (X^2) and significance level (p) of frequency data cross-tabulated according to categorical study variables (Lowry, 2014) were observed to investigate the research hypothesis of reading proficiency varying by university. The Chi-statistic was especially useful for investigating differences in proportions proficient by university because “It does not require equality of variances among the study groups or homoscedasticity in the data” (McHugh, 2013, para. 1). As shown on Table 1, the PMU sample was over twice as large as the NSU sample.

Table 1

Dependent Variables

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	%
Reading Comprehension	58	12.775	3.886	
PMU	41	11.219	3.360	71%
NSU	17	16.529	2.089	29%
Reading Comprehension Proficiency				
Proficient	36	15.361	2.086	62%
Non-proficient	22	8.545	2.063	38%

Note: Prince Mohammad bin fahd University (PMU); Northwestern State University (NSU). Percent reported for Reading Comprehension is the proportion of total study population in categories of university. Reading Comprehension at a 60% or higher level of proficiency and 59% or lower level of non-proficiency were recodes for Reading Comprehension Proficiency

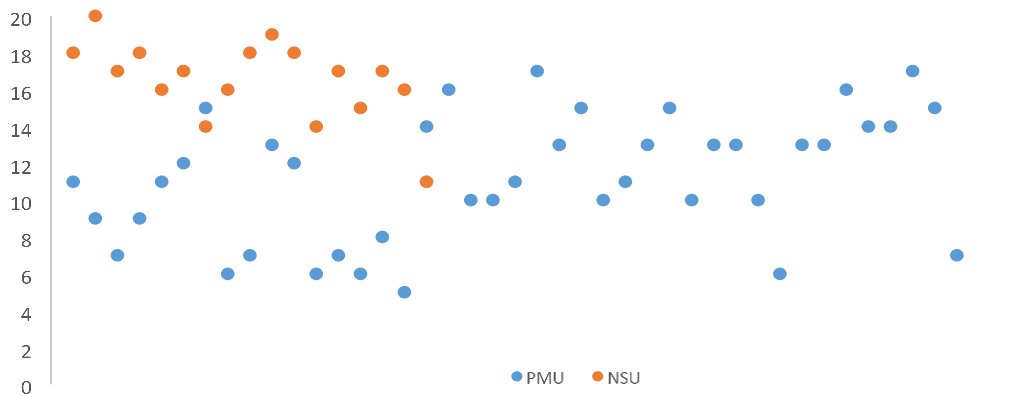
4. Results

4.1 Variance in Reading Comprehension

Scores from NSU (11-20) fell within a nine-point span, with PMU (5-15) scores ranging within a 10 point span. However, as observed in the scatterplot of scores (Figure 1), reading comprehension scores from PMU were more widely distributed. A cluster of NSU scores at upper ranges is also evident.

Figure 1

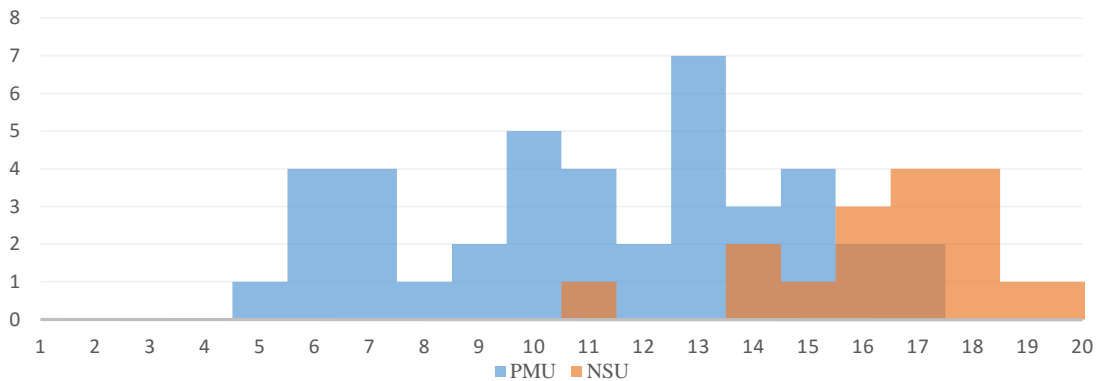
Scatterplot of Reading Comprehension Scores in Two Samples



Frequencies for each score of the reading assessment by university (1-20) are readily observable in the Figure 2 histogram. The wider spread of frequency distributions in the PMU sample is evident. One relative outlier is observed at score 11 in the NSU sample.

Figure 2

Histogram of Reading Comprehension Scores in Two Samples



Sample variance analyses supported observations from the scatterplot and histogram that revealed smaller variance in the NSU sample ($s^2 = 4.639$) than in the PMU sample ($s^2 = 11.575$). Means of reading comprehension are shown on Table 2. Undergraduate females at NSU ($M = 16.529$) had a higher mean on the 20-point assessment than their PMU counterparts ($M = 11.219$). The p -value from the F-Test Two-Sample for Variances was smaller than the .05 level of significance (Table 2). Sample variance and F-Test analysis confirmed a study expectation of reading comprehension frequencies varying significantly and a rejection of the null hypothesis of no difference in reading comprehension by university.

Table 2

F-Test Two-Sample for Variances

	<i>PMU</i>	<i>NSU</i>
Mean	11.21951	16.52941
Variance	11.57561	4.639706
Observations	41	17
df	40	16
F	2.494902	
P(F<=f) one-tail	.025649	
F Critical one-tail	2.150711	

4.2 Comprehension Proficiency

The research hypothesis of reading proficiency varying significantly by university was confirmed by the Chi-statistic and significance level (Table 3). A larger proportion of NSU students (99%) scored proficient than their PMU counterparts (49%) ($X^2 = 10.49$, $p = .0012$). The proportion of female NSU undergraduates scoring proficient on the 8th grade curriculum-based reading comprehension assessment was 50 percentage points larger than the proportion of female PMU undergraduates scoring proficient.

5. Discussion

The current pilot study explored hypotheses of significant differences in reading comprehension variance and proficiency between undergraduate students in an English-based university in the United States and an English-based university in Saudi Arabia. There is a growing number of English-based universities in countries outside of the United States and other English-dominant countries. International universities offer students in other countries the advantage of earning an English-based college degree without going abroad. Coursework in English-based universities is delivered in English, but unlike universities in countries where

English is the native language, English is a second language for university students in English-based universities in non-English countries.

An interpretive lens of differing k-12 English preparation contributing to wider variance in English comprehension proficiency connects to a study framework. Some PMU students, for example, may have had designated programming and instruction of English within the k-12 setting, while others may have only had one English language elective course in high school. Moreover, considering the effects of globalization, some PMU students may have routinely spoken English at home with a family member, while other students may have only spoken English on the university campus. Professors on faculty at PMU noticed differences in the English proficiency of students and reflected on how these differences may be affecting student progress in university coursework. Study findings of lower variance in reading comprehension scores and a larger proportion of students proficient at NSU suggest this issue may be more intense among staff in English-based universities in non-English speaking countries. As the population shifts and a growing number of students educated in foreign k-12 school systems enter universities in the United States, concerns regarding varying English proficiency levels among undergraduates may become more widespread among higher education faculty.

The overall interpretation of study results is more than an observation of low reading comprehension scores in the PMU sample. Observing a 50 percentage-point larger proportion proficient in reading comprehension at NSU than PMU is dramatic. Only one NSU student did not meet the reading comprehension proficiency of 60%, and 99% proficient was a high bar for comparison. Students from NSU scored very high, but university students attending American K-12 schools at a time when curriculum-based assessment is an instructional routine were expected to score well on an 8th grade reading comprehension assessment (especially education majors). The question the current study does not answer well is why the NSU proportion was not 80 or 90 percentage-points larger than the PMU proportion. Twenty bilingual young women from PMU did score proficient, and it is important to keep these students in mind when making instructional decisions based on assumptions of student capabilities.

Faculty in English-based universities in countries where English is not the dominant language should expect wide variance in the ability of students to understand, speak, and write in English. If the expectation is for students in non-English speaking countries to attend English-based universities, a standard of quality for English instruction in k-12 programming is crucial. Nearly half of PMU undergraduates scored proficient on English-based reading comprehension assessments, and that proportion is likely to grow with standardization of English instruction in k-12 programming

5.1. Limitations and Recommendation for Future Research

The small and uneven samples of undergraduate females affect the generalizability of research findings. Recommendations for future studies include using similar procedures as those in the current study to examine the English reading proficiency of larger samples of female and male students from a greater variety and larger number of partner universities. Additional recommendations include conducting broader studies that explore links between college performance and k-12 preparatory institutions.

Results from the current preliminary investigation support a call for future studies that explore contributing factors to the observed wide variance in English-based reading comprehension among college students in English-based universities in non-English speaking

countries. The following question is worth looking more closely into: Why did nearly half of young female undergraduates from a private university in Saudi Arabia score proficient on a reading comprehension assessment in English when nearly half of their classmates did not? Future studies may better describe how a lack of standardization, conformity, and regulation of k-12 English instruction abroad affect the English proficiency of university students in non-English speaking countries.

5.2. Practical Implications

The importance of strong k-20 linkages and layers of instructional supports are key practical implications. Promoting the academic progress of all students includes differentiation and a system of layered support, such as skill review lessons, tutorials within course organization, individual and small group conferencing, opportunities for student-to-student group work, student tutoring, oral reports and discussion as steps in the writing process, and writing support centers. The progress of bi-lingual university students who are struggling to learn English at the same time as they are expected to meet course content standards may depend on the extent to which professors organize course information, communicate straightforward requirements and clear grading criteria, and provide access to a variety of student resources.

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